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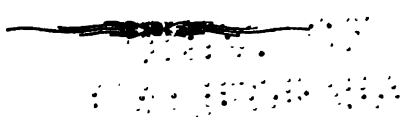
**PROCEEDINGS**  
**OF THE**  
**ESSEX INSTITUTE.**

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**VOLUME II.**

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**1856 to 1860.**



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PROCEEDINGS  
OF THE  
ESSEX INSTITUTE.

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*Wednesday, May 14, 1856.*

Annual Meeting, Rev. John L. Russell, Vice President, in the chair. The record of the last Annual Meeting was read.

The report of the Secretary was then read and accepted. According to its statement, forty-one new members have been added to the Institute; eight of the former members have removed from Essex County, one other has retired from the Institute, and one beside, has died. The present number is three hundred and one. There are sixty-six Correspondent Members, who, with eleven Honorary Members of the original Essex Historical Society, and thus in virtue of their connection with that body are also members of the Institute, make the aggregate number of our members to be three hundred and seventy-eight.

The recurrence of the Annual Meeting seems an appropriate occasion to speak of those removed by death since our last similar gathering. In thus doing, we are reminded of the decease of one, whom, though, for few years past, withdrawn from society in consequence of severe illness, yet we were wont to behold the deep enthusiasm which he always manifested in literary and historical research—a taste for these pursuits he early imbibed and sedulously cherished during a long life, thus entitling him to a place among our refined scholars. His printed productions were principally contributions to periodical literature, and were such as we should expect from a mind so richly cultivated and so highly endowed.

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FREDERIC HOWES, son of Anthony and Bethiah Howes, was born in the town of Dennis, Barnstable County, in 1782, and died at Salem, Nov. 12, 1855. At the age of six he removed with his father to Ashfield, Worcester County, and spent much of the time, until his admission to Harvard University in 1804, on the labors of the farm. Leaving college in his junior year, he entered upon the study of the law with Luther Lawrence, Esq., of Groton. He commenced the practice of the profession in Salem, resided at the same time in Danvers, which town he represented for several years in the legislature. He afterwards removed with his family to Salem, where he has continued, with the exception of one or two years residence in Boston, until his decease. He always took a lively interest in the success of our local institutions, particularly of those whose objects were the promotion of literature or the sciences. He was one of the earliest founders and officers of the Essex Agricultural Society, and succeeded the distinguished Pickering in the Presidential chair of that Society. He was also an early member of our Historical Society; a Trustee from 1824 to the union in 1848, and the Treasurer from 1831 to 1848,—was also for many years a member of the Natural History Society. In the Institute he was one of the Curators, and a member of the Finance Committee from its organization until 1854, when sickness caused him to retire.

Two of our Corresponding Members have recently deceased.

1st. THADDEUS WILLIAM HARRIS, M. D., died at Cambridge, Mass., Jan. 16, 1856. He was the son of Rev. T. M. Harris, of Dorchester, Mass., in which town he was born Nov. 12, 1795, and graduated at Harvard University in 1815. After having pursued the prescribed medical course, he established himself in the practice of the profession at Milton, Mass., where he remained until his appointment to the office of Librarian in Harvard University, in 1831, made vacant by the death of Mr. Benjamin Peirce—in which situation he continued until his decease. Dr. H. was early imbued with an ardent love of Nature, and devoted his leisure to the study of the sciences. So successful was he in that of Insects, that after the death of Say, he was placed at the head of American

Entomologists. His earlier contributions on Insects appeared in the *New England Farmer* of Boston, and other agricultural journals. In 1833 he prepared the systematic catalogue of Insects in Hitchcock's *Geology of Massachusetts*,—the first attempt to catalogue the Insects of any section of territory on this continent, comprising some 2350 species, specimens of nearly all in his own cabinet. His report on the Insects of Massachusetts injurious to vegetation, printed in 1841,—a small impression with slight alterations in 1842, and a second edition in 1852, is considered of the highest authority among works of this class, and is marked by accuracy and thoroughness. Dr. H. communicated to the *Natural History Society* in 1837, a paper on the history of the Goliath Beetles, which was printed in the journal of the Society.

2d. JOHN COLLINS WARREN, M. D., born at Boston, Aug. 1st, 1778, graduated at Harvard University in 1797, died at his residence in Boston, Sunday morning, May 4th, 1856. In 1806 he was appointed Adjunct Professor of Anatomy in Harvard, and after the death of his father, he was the successor. In 1847 he retired from his position, having discharged the duties for a period of 32 years. Since that time he has devoted himself very much to the study of the natural sciences, and at the time of his decease was President of the Boston Society of Natural History. His great work on the American Mastodon, published at his own expense, has been freely distributed in the principal scientific libraries of this country and of Europe. A second edition somewhat enlarged has just been issued from the press. His museum of specimens in comparative anatomy and palaeontology, including probably the most perfect skeleton of the Great Mastodon in the world, may be considered among the finest private collections. He has been distinguished and eminent as a physician, a surgeon, a teacher of anatomy, and a learned and zealous devotee to scientific pursuits, especially those of comparative anatomy and palaeontology.

The quarterly meetings have been held, and ordinary ones on Wednesdays at noon, occasionally, for the election of members and for the transaction of such business as appertain thereto.

Thirteen evening meetings for the discussion of subjects connected with the objects of the Institute, have been held, commencing on the 8th of Nov., and continuing on the 2d and 4th Mondays of each month. The interest manifested in them gave assurance of their utility.

The following additions, during the year, not included in those, committee's Reports herewith submitted, may be specified :

TO THE HISTORICAL DEPARTMENT. F. W. Putnam, fish-hooks made of shells, South Sea Islands. J. Tucker, George N. Ropes, H. M. Brooks, F. W. Putnam, P. D. Allen, various coins. H. F. Shepard, powder flask from the interior of Africa. B. W. Stone and M. A. Stickney, specimens of paper continental currency. John F. Ropes, umbrella, tobacco pouch, and specimens of tobacco, from Japan. P. D. Allen, palm branch used by the Catholics at Rome on Palm Sunday. Jos. True, outline of front elevation of the court house in Salem, as it was before it was removed in 1839. J. V. Browne, species of gourd from China. C. Linnæus Allen, of Union Springs, Indian skull from Cayuga Lake, N. Y., also Indian relics from the same locality. Joseph Chisholm, spy glass taken from a vessel in the war of the Revolution. James Manning, specimen of Chinese paper currency. George Harrington, model of catamaran or zangada, from the coast of Brazil. Henry K. Oliver, model of an improved bee-hive. Jas. B. King, bomb-shell, minnie rifle ball, &c., from the battle field of Inkerman. Peabody Institute, Peabody medal, award of merit in the high schools of Danvers. Mrs. Hannah Cortel, ancient engraving of the city of Constantinople. B. Cox, jr., specimen of coral, of which the fortress at Vera Cruz is made; Mexican bullet. C. W. Upham, portrait of Capt. James Mugford, the naval hero and protomartyr in the Revolution; engraved portrait of Hugh Peters, and John Winthrop; framed engraving of Dartmoor prison, by Glover Broughton of Marblehead. Mrs. Conway, specimen of fish hooks from Fejee Islands.

TO THE DEPARTMENT OF NATURAL HISTORY. The collection of *Reptiles*, particularly of those which are found within the

limits of the State, is very good, comprising nearly all the various species. In the collection of Turtles are representatives of nearly, if not quite all, the known groups,—embracing more than thirty species. The following additions have been made during the year :

*Reptiles*.—F. W. Putnam, *Rana pipiens*, *R. scintillalis*, *R. sylvatica*, *R. palustris*, *Bufo americanus*. N. C. Robbins, young living *Alligator*; *Cistuda carolina*, adult and young; *Emys mobilensis* young, from Apalachicola, Florida. J. C. Osgood, *Hyla versicolor*, North Danvers.

*Mollusca*.—W. S. Rowson, shells from Skuykill river. N. C. Robbins, shells, &c., from Florida. S. L. Weeks, of Danversport, very large specimen of *Venus mercenaria*. Simon Shurtleff, of Westfield, shells from Bombay E. I. D. F. Weinland, of Cambridge, 26 species of European *mollusks*.

*Comparative Anatomy*. In this department many valuable additions have been made. Skeletons of *Vespertilio*, *Talpa Europea*, *Sciurus* sp: *Lepus* sp: procured in Paris; also a skull of the European Hedge Hog, (*Erinaceus Europeanus*.) The Chamois (*Antilope rupicapra*); a human skull, portion of the bones of the jaws removed, so as to exhibit and illustrate dentition, both sets of teeth visible, the milk and the permanent. From W. R. Waters, antlers of the American Stag. Jesse Potter, skull of Albatres, (*Diomedea exulans*). Wm. Saunders, foetal skull of the common Horse, (*Equus caballus*); skull of the *Equus asinus*. Perhaps in no previous year has so many truly valuable additions been made.

*Mineralogy and Geology*. Ezekiel Goss, specimens of gold quartz, from Grass Valley, California. C. L. Peirson, minerals. John H. Kemp, of Brooklyn, N. Y., lignite and fossil fruit, from Brandon, Vt.; fossil coal, from Schoharie Co., N. Y.; Arctic coal, from Hare Island, coast of Greenland—the structure examined by the microscope indicated it to be from pine wood. G. F. Read, minerals, from Lake Champlain. A. T. Savory, of New-York, serpentine and other minerals, from New Jersey. Geo. F. Chever, sodalite, Salem Neck;—the discovery of this mineral in our vicinity is extremely interesting—an account of which, under the name of cancrinite, may

be found in Vol. I. p. 151. Rev. C. Lowe, fossils from Mount Lebanon. Henry Felt, minerals from Utah. O. C. Marsh, many species of minerals, new to the collection. In December, Mr. Marsh spent several days in the arrangement of the minerals, and in so doing added several species from his own cabinet.

The donations to the cabinet have been received from ninety-one individuals or else societies—the names are herewith annexed.

#### DONORS TO THE CABINETS,—1855-6.

##### Peabody Institute, Danvers.

Allen, C. L., Union Springs, N. Y.	Jillson, Samuel, Lynn
Allen, George	
Allen, Pickering D.	Kemp, John H. Brooklyn, N. Y.
Andrews, Wm., Cumberland, Md.	King, James B.
Barton, William C.	Lackey, Andrew, Marblehead
Brookhouse, Robert, jr.	Lawrence, Louis
Brooks, Henry M.	Lee, Miss
Browne, J. Vincent	Lec, Charles J.
	Lefavour, William
Chadwick, John	Lowe, Charles
Cheever, Joseph	
Chever, Charles G.	Manning, James
Chever, George F.	Martin, John N.
Chisholm, Joseph	Mason, Mrs. G. R.
Clark, Mrs. G. D.	Messervy, Wm. S.
Conway, Mrs.	Neal, Benjamin B.
Cortel, Mrs. Hannah	
Cox, Benjamin, jr.	Oliver, Henry K., Lawrence
	Osgood, Charles C.
Dana, Samuel, Marblehead	Osgood, John C.
Fabens, Miss C.	Peirson, Charles L.
Felt, Henry, Salt Lake, Utah	Pickering, Eben
French, Henry, U. S. Navy	Potter, Jesse
	Pratt, Henry J.
Goss, Ezekiel	Prince, B. R., Beverly
Gardner, Miss Elizabeth R.	Putnam, Charles A.
Goldthwaite, S. F.	Putnam, Mrs. E. A.
Goldthwaite, Joseph A.	Putnam, Fred. W.
Goodhue, William P.	
	Read, George F.
Harrington, George	Rideout, N.
	Rideout, Justin
Ives, Henry P.	Rider, J. J.
Ives, John S.	Robbins, Charles



Robbins, N. C.	True, Joseph
Ropes, George N.	Vaill, W. K.
Ropes, John F.	Warren & Sons, Sacramento, Cal.
Ropes, Ripley	Waters, Charles R.
Rowson, William S., Philadelphia	Waters, Wm. R. Sacramento, Cal.
Russell, John L.	Webb, Benjamin, jr.
Saunders, Charles H.	Webb, J. F. jr.
Saunders, William	Webb, Miss M. E.
Savory, A. T., New York	Weeks, S. L., Danversport
Shaw, Jonathan A.	Webster, O. A. & Co.
Shepard, Henry F.	Welch, George, Lynn
Shurtleff, Simeon, Westfield	Weinland, David F., Cambridge
Silsbee, William	Wheatland Richard
Stone, Benjamin W.	Wheatland, Richard H.
Stone, Lincoln R.	Winsor, F.
Tucker, J.	

DEPARTMENT OF HORTICULTURE. Only one exhibition has been held during the past year, that took place on Wednesday, Thursday and Friday, Sept. 19, 20 and 21.

The display of *Flowers* was somewhat limited, owing to a heavy rain on the day preceding the opening of the exhibition.

That of *Fruit*, though not as extensive as some seasons, maintained the usual degree of merit in the fine specimens of pears which were placed upon the tables. The great deficiency being in that of the apples, and more particularly in peaches and plums.

That of *Vegetables* was more extensive than at any previous exhibition. It has been suggested that more attention should be given to this department, which is by all means the most servicable for the support of man;—with a little effort, a fine collection could be made, which would compare favorably with the same in other sections of the State.

The LIBRARY has been enriched by the addition of the following *Donations* :

Folios 38, Quartos 9, Octavo and lesser-fold 295, 342	
Additions by purchase,	15
	357
Pamphlets, about 700—Serials, about 500,	1200
	<hr/> 1557

The above donations have been received from 91 individuals and societies, and their names are herewith annexed.

## DONORS TO THE LIBRARY—1855-56.

United States Patent Office,  
 Surgeon General's Department, Washington,  
 New York State Library, Trustees,  
 Massachusetts State Library,  
 Massachusetts Legislature,  
 E. M. Wright, Secretary State of Massachusetts,  
 Harvard College, President and Fellows of,  
 Cincinnati Public Schools, office of,  
 Rhode Island Historical Society,  
 Wisconsin State Historical Society,  
 American Antiquarian Society,  
 Lyceum Natural History of Williams College,  
 Boston Mercantile Library Association,  
 Boston Prison Discipline Society,  
 Boston Public Library, Commissioners of,  
 Peabody Institute, Danvers,  
 Essex Agricultural Society.

Adams, George, Boston  
 Allen, J. Fisk  
 Anderson, Miss Mary C.  
 Andrews, Joseph  
 Andrews, Wm., Cumberland, Md.  
 Appleton, John, Boston  
 Ashton, Miss Anna

Ball, John  
 Barton, William C.  
 Brooks, Henry M.

Callier, James M.  
 Carlton, William J.  
 Chapman, John  
 Cole, Mrs. N. D.  
 Cleaves, Joshua

Daland, John  
 Derby, Perley  
 Devereux, Humphrey  
 Drake, S. G., Boston

Emery, Samuel

Foote, Caleb  
 Flint, Charles L., Boston

Greene, Samuel A., Groton  
 Grosvenor, D. P.  
 Grosvenor, Mrs. L. K.

Hammatt, Mrs Abraham, Ipswich  
 Herrick, E. C., New Haven, Conn.  
 Holmes, John C., Detroit, Mich.

Ives & Smith

Johnson, A. B., Utica, N. Y.

Kilby, William H., Eastport, Me.  
 Kimball, James  
 Knights, William

Lawrence, Charles  
 Loring, George B.

Macauley, James, Frankfort, Her-  
 Mack, Wm. [kimer Co., N.Y.  
 Means, J., Groton

Northey, Abijah, Estate of  
 Northey, William

Paine, Martyn, New York, N. Y.  
 Palfray, Charles W.  
 Parker, George A.  
 Peirce, Nathan  
 Peirson, Charles L.  
 Phippen, George D.  
 Pulsifer, David

Quint, A. H. Jamaica Plains

Read, George F.  
 Robinson, Mrs. John  
 Ropes, Nathaniel, Cincinnati, O.  
 Russell, John L.

Shepard, Henry F.  
 Sibley, John L., Cambridge  
 Simon, F. B.  
 Snell, E. S., Amherst College  
 Stickney, M. A.  
 Smith, Jesse  
 Snow, E. M., Providence, R. I.  
 Stone, E. M., Providence, R. I.  
 Stone, Lincoln R.  
 Stone, T. T., Bolton

Treadwell, John G.  
 Treadwell, John W.

Upton, James  
 Upton, Luther, Springfield  
 Upham, Charles W.

Warren, John C., Boston  
 Waters, J. Linton  
 Waters, Wm. R. Sacramento. Cal.  
 Weinland, David F., Cambridge  
 White, Daniel A.  
 Worcester, J. F.  
 Worcester, S. M.  
 Wyman, Jeffries, Cambridge

In this connection it may be proper to mention the additions which have been made to the MSS. by the active exertions of Mr. H. M. Brooks and Dr. L. R. Stone. The donation of some valuable papers, respecting the paving of Main street, (now Essex,) between Britton's and West's corners, in 1773, by Dr. John Appleton, of Boston. Also, some valuable papers from Hon. C. W. Upham, &c.

During the month of December last, a pamphlet of 24 pages was printed and distributed among the members, containing Constitution, By-Laws, List of Members; also, remarks explanatory of the objects, &c.

In thus presenting a full and accurate account of the doings of the Institute, during the past year, it will be perceived that a gradual approximation towards advancing the objects of the formation of the Institute is gradually but cheerfully going on.

The Report of the Treasurer was read and accepted.

The Report of F. W. Putnam, in behalf of the Committee on ORNITHOLOGY, on being read, was accepted. The Report states that the collection under the charge of the committee, is in as good condition and arrangement as the crowded cabinets would give reason to expect.

During the last year the North American Birds have all been numbered and catalogued, as far as possible, according to  
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the classification of Audubon. To make the collection as perfect as possible, we have endeavored to procure specimens of birds in the different stages of plumage, as well as of their different ages and sexes, especially those illustrating the Ornithology of Essex County; and to make our collection still more perfect and desirable for study, we would recommend that alcoholic specimens be added to it. To the Foreign Birds very little has been done, from the want of proper books for necessary references,—our library being very deficient in this department. The collections of Nests and Eggs have increased very much during the last year, and have also been catalogued. For so recent collections they are exceedingly rich in rare specimens. We would avail ourselves of this opportunity to call upon members and others to assist us in obtaining specimens.

The following enumeration shows the present condition of these departments, viz :

209 mounted specimens of North American birds containing 148 species; 137 specimens of foreign birds; 12 specimens of foreign birds nests; 74 specimens of foreign birds eggs, containing 41 species, determined; also 23 species contained in 72 specimens, not determined; 58 specimens, containing 32 species of American birds' nests; 200 specimens of American birds' eggs, containing 81 species, not including about 27 species contained in 50 specimens of undetermined ones.

In addition to the enumerated nests and eggs, we have a large number of duplicates for exchanges. The donations and additions during the past year, are as follows—(those to which no localities are assigned are from Essex County, with the exception of a few which are marked with a query, which are not known—viz :

From W. S. Messervy, *Turdus mustelinus*; J. F. Webb, jr., *Muscicapa tyrannus*, *Trichas marilandica* (male); Dr. B. Cox, six skins of birds from Para; F. W. Putnam, *Tringa arenaria* (female, summer plumage); B. B. Neal, *Thalassidroma Wilsonii* (female, sum. plum.); J. A. Goldthwaite, live specimen of *Puffinus cinereus* (aut. plum.), caught in his garden near the common; J. J. Rider, "whidah bird" (male), Africa; H. P. Ives, *Falco columbarius*

(male, aut. plum.); J. A. Shaw, *Ardea herodias* (young male, spr. plum.); J. S. Ives, three specimens of African cage birds, and *Pyrhula vulgaris*, from England; Mrs. G. R. Mason, bird from Africa; H. F. Shepard, Pheasant from St. Helena, and *Phaeton aethereus*; G. F. Read, five specimens of African birds; B. B. Prince, of Beverly, *Bubo virginianus*; R. Brookhouse, jr., *Tetrao canadensis* (male,) Maine; A. Lackey, of Marblehead, *Sterna* sp? taken from the guano at the Chincha Islands, about 100 feet beneath the surface. This bird is so well preserved, that the few feathers which remain still retain their color, which is black and white; John F. Webb, jr., nest and eggs of *Muscicapa tyrannus*; William Silsbee, eggs of *Columba palumbus*; Mrs. G. R. Mason, Sixteen eggs of *Fringilla canariensis*; C. G. Chever, malformed egg of *Gallus domesticus*; George Welch, of Lynn, nest and eggs of *Carduelis tristis*; Miss M. E. Webb, nest of *Chaeturea pelagica*; Mrs. G. D. Clark, do. do. do. S. Jillson, of Lynn, eggs of *Ectopistes migratoria*, *Tetrao umbellus*, and *Coccyzus erythrophthalmus*; nests of *Hirundo rustica*, and *Vireo olivaceus*; nests and eggs of *Seiurus aurocapillus* (with 2 eggs of *Molothrus pecoris* deposited in it); *Turdus Wilsonii*, *Orpheus carolinensis*, *Muscicapa virens*, *Pipilo erythrophthalmus*, *Fringilla melodia*, *Dolichonyx oryzivora*, *Ammodramus maritimus*, *Vireo olivaceus*, *Garrulus cristatus*, *Trochilus colubris*. F. W. Putnam, nest and eggs of *Emberiza socialis*, *Fringilla melodia*, *Niphaea hyemalis*, from North Conway, N. H., *Quiscalus versicolor*, *Sylvicola aestiva*, *Bombycilla carolinensis*, *Carduelis tristis*, *Linaria minor* (?).

ADDITIONS. *Anas sponsa* (female, sum. plum.), *Fuligula americana* (male, wint. plum.), *F. albeola* (male and female, wint. plum.), *F. glacialis* (male, wint. plum.), *Sula bassana* (young male, sum. plum.), *Larus marinus* (adult and young males, wint. plum.), *Uria grylle* (female, wint. plum.), *Muscicapa crinita* (male and female, spring plum.), *Parus atricapillus* (male, aut. plum.), *Alauda alpestris* (male and female, wint. plum.), *Linaria pinus* (male, wint. plum.),

*Carduelis tristis* (male, wint. plum.), *Pyranga rubra* (fem. sum. plum.), *Quiscalus ferrugineus* (male, aut. plum.), *Lanius borealis* (male, wint. plum.), *Charadrius helveticus* (young male, aut. plum.), *C. marmoratus* (male, aut. plum.), *Strepsilas interpres* (aut. plum.), *Tetrao phasianellus* (male, wint. plum., ? locality).

IN EXCHANGE. Eggs of *Alca torda*; *Musicapa crinita*; *M. acadica*; *M. fusca*; *Trichas marilandica*; *Parus atricapillus*, *Erythropsiza purpurea* (?) *Turdus solitarius* (?) *Vireo flavifrons*, *V. noveboracensis*. (The localities of the above exchanges are not known.)

The Report of Dr. R. H. Wheatland, in behalf of the Committee on ICHTHYOLOGY, on being read, was accepted. It is as follows, viz :

During the past year our specimens of North American fishes have been catalogued and numbered, in accordance with the classification of the synopsis of Storer.

Very considerable additions have been made to the collection, but it is still in a very imperfect state, and it is particularly desirable, at the present time, when there is a prospect of our being able to devote a much larger space to it, that it should be rendered as complete as possible, more especially, in those specimens which illustrate the Ichthyology of our county. Many of the more common species are still wanting, and it is to be hoped that the members of the Society will use their best efforts to supply the deficiencies during the approaching summer.

As far as possible, the foreign fishes have also been numbered, but from the want of proper books, many still remain unrecognized, of which quite a number, doubtless, have never been described.

The following is a list of the Ichthyological specimens belonging to the Society :

Of North American fishes, 263 specimens, embracing 26 families, 61 genera, 80 species; of recognized foreign fishes, 108 specimens, embracing 42 species; of unrecognized foreign fishes, 36 specimens, embracing (probably) 20 species.

The following is a list of donations during the past year:

From F. W. Putnam, *Merlangus carbonarius*, *Atherina notata*, *Cottus groenlandicus* (young & old); Charles J. Lee, *Labrax rufus*, *Pimelodus catus*, *Perca flavescens*, *Pomotis vulgaris*, *Leuciscus americanus*; P. D. Allen, *Labrax lineatus*, *Labrax rufus*, *Pomotis vulgaris*, *Catostomus bostoniensis*, *Morrhua pruinosa*; Joseph True, *Cottus virginianus*, 10 specimens of *Syngnathus Peckianus*; S. F. Goldthwaite, *Seriola zonata*, *Temnodon saltator*, *Osmerus viridescens*, *Alosa sapidissima*, *Phycis americana*; Jesse Potter, *Syngnathus*, (spec. ?), Gulf Weed; Wm. P. Goodhue, *Prionotus lineatus*; Charles A. Putnam, 2 specimens *Palinurus perciformis*, *Tautoga americana*, (a very large specimen weighing 14 pounds); H. W. Putnam, *Palinurus perciformis*; C. C. Osgood, *Temnodon saltator* (young); A. Rideout, *Hemitripteris americanus*; B. Webb, jr., *Sebastes norvegicus*; John N. Martin, *Prionotus*; N. C. Robbins, *Maltha nasuta*, from Apalachicola, Florida; S. Jillson, *Lamna punctata*; F. Winsor, *Phycis americanus*; L. R. Stone, *Morrhua aeglefinus*; Charles Robbins, *Scomberesox Storeri*; John Chadwick, do. do.; Mrs. G. R. Mason, *Syngnathus*, (spec. ?), West Coast of Africa; Wm. C. Barton, *Lepidosteus longirostris*; Eben Pickering, *Centropristis varius*, weight 3 pounds, length 11 3/4 inches, rare North of Martha's Vineyard; Messrs. Webster, Ham & Newcomb, *Lamna punctata*, a very large and beautiful specimen, measuring over 8 1/2 feet in length.

Where no locality is mentioned, the specimens were from the waters of Essex County.

The Report on MAMMALOGY, by Dr. Frederick Winsor, was read and accepted. It was as follows, viz:

In the cabinet of the Essex Institute, there are now 48 specimens of the Mammalia, stuffed or in alcohol, exclusive of duplicates. These have recently been examined, numbered and catalogued. Their condition is pretty good. The catalogue has been made in accordance with the most recent and approved system and nomenclature, to which the examiner has had access. Space has been left for the insertion of various genera

and species, of which, it is to be hoped, the Institute will soon possess specimens. Our collection of American monkeys is less incomplete than our collection of any other family, but even this is sadly meagre,—and this is true of the rodentia felidæ and canidæ, even with regard to the native genera and species. It is hoped that the members will aid in supplying the deficiency.

The following are the only donations which this department has received since the last report :—From Miss Lee, Salem; *Vespertilio subulatus*; Miss Gardner, Danvers, *Pteromys volucella*; John S. Ives, Salem, *Cavia cobaya*, three specimens; Geo. F. Read, Salem, *Condylura cristata*.

The Library of the Essex Institute is wanting in proper books of reference on this subject. Wagner's work on the Mammalia, now in course of publication, would be very useful; and there are many valuable monographs which we want.

The following Report on the HERBARIUM, by John L. Russell, was read and accepted :

According to custom and usage, as well as the rules of the Institute, some Report on the condition of the Herbarium may be expected.

The importance of this department in the pursuits of Natural History, is being felt more and more from year to year.

Vegetation lies at the very foundation of all organized nature. The records of all past time, equally with the daily lessons of the passing epoch, testify to the exalted rank, which the Creator has imposed on the vegetable kingdom. The first trace of a divine hand upon this planet was in the calling into activity the plants of the ocean, and then of the bared rock and the upheaved earth-surface. Before any animal could subsist, the *plant* must first grow. Then followed geological forms, in proportion as vegetables were presented. The gradation of alga, moss, fern, grass, palm, tree, are impressed on the strata for the geologist's study—and he who finds "sermons in stones" reads the same lesson in them that he can read elsewhere in the living world.

The attention to Botany demands an herbarium to render it



of any avail. An herbarium is not a bundle of dried herbs, nor a heap of hay and sticks, but an eloquent book. Each specimen bears several values. One is its intrinsic value as a preserved plant-form, a curiously organized production of nature. Those whose tastes and habits lead them to constant association with plants, acquire a sort of reverence for every living plant or for every dried specimen of some carefully prepared vegetable. This is no extravagance nor folly, neither does any enthusiasm explain the fact. It arises from the increasing sense of the magnitude of the importance, which attaches to vegetation above every other natural effort of creative power and wisdom. Almost every one acquires a love for some tree or trees upon his grounds, even a reverence for some favorite old and venerable weather beaten specimen, with which his eye has been always familiar. What ruthless deed would go unavenged, which destroyed or injured a patriarch pear tree or noble old apple tree, which had fed and delighted many generations? Who would not try to spare, amid public improvements, some relic of the forest, yet stretching its branches over the thickly settling village, which is "but as yesterday" compared to it? We sometimes wonder at the longing for the sight of a bit of green grass, or the delight at meeting a familiar weed of our homes in some distant land—but why should we wonder? Once a person was very much overcome at the sight of a tropical plant in my garden, and with much emotion cried out, "Home, home." The dark green foliage of a taro plant, carried him back to his childhood, from the scenes of which he had been separated for many, many years. Had he met one of his playmates as suddenly, he could not have been more affected. Such and similar are the results from the intrinsic value of every plant, from the "hyssop which groweth on the wall to the cedar of Lebanon." Such sensations are valuable and important for culture of the mind and of our natures. It were better if there were more of it, and wiser and more virtuous would many be, if such feelings were more prevalent.

2. Every vegetable organization has an associative value. This is seen in the garden and in the herbarium. The former is the *hortus virescens* and *vivens*—the other is the *hortus*

*siccus*. Who does not visit with rare and refined pleasure the tree, planted by some distinguished individual, or consecrated by some glorious act? We cannot always memorialize these living specimens, but we can create increased associative value to dried specimens of plants. I wonder how few there are, who have not cherished some faded rosebud, or yellow geranium leaf—the gift of affection,—or turned over reverentially the dried and attenuated holly-hock and peony petals in the old family bible,—which those, whose memories we revere, have placed there?

There are actual specimens of plants in the herbaria of Europe, plucked by Linnæus; and for whose sake, many of his pupils imperilled their lives to bring them to their master from every land. Could we conceive a more worthy respect for such choice but withered garlands of human fame, than is due and is paid to these specimens of plants?

That herbarium is rich and valuable, which can collect the labors of as many naturalists as possible, both of the illustrious living and of the noble dead. In this associative relation, with some of the best and most patient and noblest of earth's sons, the collection of an herbarium becomes of prime value and importance.

3. The herbarium may be made an instructive volume of the past as well as of the present. A little dried bit of a vegetable culled and preserved by the hands of some collector—especially if accompanied by his own schedule or MS. ticket, bearing the date and place of growth,—may settle an historical point, or indicate the changes, which have occurred in some district of country. Plants appear and disappear with a mysterious significance from spots well known to man;—the notice of their visits, return or total absence from such areas of country, are too valuable to be utterly neglected. How intensely curious would a perfect suite of the rarer plants of this vicinity be to us now, if we could see the specimens detected by Dr. Cutler, Dr. Pickering, Dr. Bass, Dr. Nichols, and the celebrated OAKES—arranged in the serial order of their herborization and definitive of the early condition of our surroundings, when nature was nearer and closer to our dwellings. Where is the

antiquarian to describe and restore the fine old gardens of a century ago, when the venerable fruit trees, which may yet exist here and there, were veritable striplings in the horticultural race, and when they fondly looked forward with a prophetic eye to this city of gardens. Who would not be glad to reverently handle, not only the "mosses of the manse," and the time stains of lichens, which grew on the "house of the seven gables," but have restored to him, all the brave show of daffies and peonies, of hollyhocks and tulips, which adorned the parterres and borders of the most worshipful worthies of ancient Salem? Would that some fair maiden had bequeathed to us her herbal, filled with the very flowers which she loved to water and admire—withered indeed, but venerable—scentless of the breath of the morning, yet redolent with a thousand sweet memories and fancies.

The herbarium contemplates—not only the preservation of specimens of flowers and branches, roots and leaves of plants, but is a conservatory of fruits, seeds, gums, woods, fibrous tissues and the like, used in Arts or in Medicine. It is desirable that efforts be steadily directed to this department of our collection, already quite rich and valuable. We would urge on all members engaged in various manufactures to present such specimens of any vegetable-article, which may be employed by them, accompanied with such information as may be readily reached, such as the period of its introduction into mechanical labor—the value, as a material and the like notices. All such specimens will be duly labelled and recorded, for future reference.

The additions during the past year have been slowly going on, and some are of much value. They have been noticed from time to time in the reports of donations before the ordinary and other meetings of the Institute.

The specimens are in good general order, and are arranged as is, at present, practicable. In this, as in all the other departments, the most pressing want is that of room. A great many specimens are still in waiting for more expansive arrangements and many of the bundles need revising. I trust that some zealous and younger hand will arise among some of our members, who may become a co-laborer in this pleasant

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occupation. We want our own pastures, rocks, fields, sea-shores, soundings on ocean and ponds thoroughly explored. A great deal of knowledge is in our midst, yet unappreciable, because not in a working-up order. No single person, unless like our Oakes, could singly undertake this great task, and even his life was all too short for its completion. A catalogue of the plants indigenous and naturalized in Salem, would be a very great credit to the auspices of this Institution.

I am happy to inform you of the facilities lately put at my disposal in studying an obscure branch of Botany ;—I mean, the Fungi. My new and valued acquaintance, Mr. C. J. Sprague, of Boston, has collected many species ; and I have forwarded some of my own collection to Rev. M. A. CURTIS, D. D., of Society Hill, South Carolina, who is engaged in reviewing the labors of Schweinitz, in this department of Botany, and preparing to publish a Mycology of the United States. By these means many of the species, peculiar to this vicinity, will be duly brought to light and ascertained. The success we have already met with in our joint labors, encourages us to hope for some signal results. Diseased specimens of trees, of fruits, seeds, &c. &c., resulting from the invasion of fungi and moulds, are respectfully solicited from members, for the cause of science and for study. I gladly acknowledge my indebtedness to H. F. King for accurate microscopic examinations, and for beautiful sketches from nature, in furtherance of this subject.

In consideration of the preeminent claims which the study of the vegetable kingdom holds on the public mind, it is to be regretted that the young of our city are not put in the way of acquiring a taste for the same. Botanically or horticulturally considered, it is a matter of much regret to know how ignorant they are suffered to grow up, insensible to all that is so beautiful and glorious about them. I do not consider it too extravagant to assert that the only true entrance into all real science is through the avenue of the study of the science which treats of plants. How can we expect to interest our girls or our boys in the mechanism of the human frame, or in the laws of hygiene and of physiological characteristics, without first leading their minds through the pleasanter and verdant paths bestrew-

ed with the bright consummate flower? What a sarcasm on our modern improvements in teaching, for the graduates of our schools to quit the academic halls of *learning*, ignorant of the morals, uses, habits and natural history of the very trees, which have so very kindly sheltered them from the hot sun in their pastimes, and of the weeds, which would grow, though never so much neglected, around the steps of the very doors they have daily and yearly passed in and out! What a parade of words to measure, by mathematical formulas, the march and order of star and sun, of the beams of light traversing space almost infinite, and yet unable to know the worm that is basking in its rays, or the difference of the emerald grasses, which are wiser than they, in a practical knowledge of how vivifying the chemistry of this or of that pencil of the life-giving element.

The hall containing shells, birds, beasts, fishes, insects, plants—in fine, the thousand specimens of our collection, is always open to every school boy or school girl, and they are welcome to see and admire—for it will be admitted that the second steps of learning are naturally and readily taken from first seeing and then admiring.

But the Essex Institute has a wider and higher office to perform towards the young of this city. Among its three hundred members are the very parents or guardians, in many instances, of those young persons, who are supposed to be the friends and patrons of all kinds of public instruction. From the ever increasing crowds of boys and girls, we are to take, by and by, the future members of our body, to help us bear forward the sacred ark of science, and to maintain its usefulness when we are gone. For though the naturalist like the poet,—

nascitur non fit—

yet the embryo naturalist is to be sought for in the school-form, and school-desk, and his early taste should be aided even there.

Every human mind was framed for the contemplation of Nature, and constituted to throw itself lovingly and trustingly upon her great maternal bosom. It can draw from it the gushing fluid of a true future life—and in every other harder,

severer or more pressing call, it can secrete (even if by repressing its out-bursting for the present) a true and delightful future condition of life. Like the great and revered surgeon,\* lately departed, it can, when emancipated from present duties, adorn and beautify the closing period of natural age with the pursuits of some favorite branch of science, and find in nature a kindly return for every emotion of love for her. Preeminently then, let our young learn, from the "grass of the field" and from the lilies and from the flowers, the initiatory lessons to practical usefulness and to honorable artistic or else literary fame. Let them become, through such facilities, as it were, choice herbaria of your wisdom, and upon such specimens as they may be, may your inscription of their name and rank, in the great science of human life redound to your perpetual honor, and they stand up before the world, in proper time, as "well ripened sheaves of the finest wheat in the garner" of society and of God's own divine and progressive Providence.

After some business relative to certain amendments in the Bye-Laws, which were duly passed without any dissent, it was

*Voted*, to proceed to the choice of officers for the year ensuing, or until others shall be chosen in their stead:—Messrs. L. R. Stone and F. W. Putnam being appointed to collect, assort and count the votes.

The following were declared elected:

*President*—DANIEL A. WHITE.

*Vice-Presidents*—John Glen King, John Lewis Russell, John Clarke Lee.

*Secretary and Treasurer*—Henry Wheatland.

*Librarian*—John H. Stone.

*Cabinet Keeper*—Frederick Ward Putnam.

*Finance Committee*—John C. Lee, E. Emmerton, Joseph S. Cabot.

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\* John C. Warren, Hersey Professor of Anatomy and Surgery in Harvard University.

*Library Committee*—Daniel A. White, George B. Loring, Samuel P. Fowler.

*Publication Committee*—John L. Russell, Henry Wheatland, George D. Phippen.

*Curators of the Historical Department.* On Ethnology—John G. King. William S. Messervy, Matthew A. Stickney, F. H. Lee. On MSS.—Henry M. Brooks, L. R. Stone. On Fine Arts—Francis Peabody, J. G. Waters.

*Curators of Natural History.* In Botany—John L. Russell. In Mammalogy—Frederick Winsor. In Ornithology—Frederick W. Putnam. In Herpetology—Charles R. Waters, Charles J. Lee. In Ichthyology—Richard H. Wheatland. In Comparative Anatomy—Henry Wheatland. In Articulata—Caleb Cook. In Mollusca—Henry F. King. In Radiata—Geo. A. Perkins. In Mineralogy—Benjamin F. Mudge. In Geology—Henry F. Shepard. In Palæontology—Henry F. King.

*Curators of Horticulture.* On Fruits and Vegetables—James Upton, Robert Manning, John F. Allen, Charles F. Putnam. On Flowers—John C. Lee, Francis Putnam, William Mack. On Gardens—John L. Russell, John C. Lee.

At a previous (evening) meeting, held May 12, 1856, Rev. John L. Russell read a letter, received from the Rev. Thomas W. Higginson, respecting a fine specimen of the Norfolk Island Pine (*Eutassa excelsa*), introduced several years ago, into Fayal, Azores. Extracts from this and from subsequent correspondence are here inserted.

"*Horta, Fayal, March 1, 1856.* The very first day" (of arrival) "I asked about your *Araucaria*, and have often since enjoyed its elegant beauty. It is the tallest tree in Mr. Dabney's gardens, but looks as if destined to grow much more than its present height of sixty feet, as its trunk tapers rapidly from bottom to top; still it loses in its growth the protection from the salt breeze, which it first had. It has produced seeds for

several years, but attempts to produce any thing from them, have as yet proved unsuccessful."

*March 26.* To day I have measured the Pine as best I could, and make it about fifty-six feet. Mr. Dabney said that somebody, who was here and seemed to know, (but he had forgotten who), pronounced it the tallest specimen north of the Cape of Good Hope. It is perfectly regular and is one of the most beautiful trees I have ever seen. There is no sign at the top of its being yet warped or stunted by the sea breezes to which it is beginning to be greatly exposed; the average distance between the whorls of branches being about the same at top as farther down, averaging about two and a half feet. When the tree was young, it was exposed to several mishaps, trampled down, cut off, &c; but shows no trace of these. Two others were sent at the same time—one died, the other is at a suburban garden of Mr. D's but smaller than this one. One other was afterward sent (by the late Prof. John W. Webster) to St. Michaels, where it has prospered, but is still smaller than this, which I have measured."

Mr. Russell having been instrumental in procuring the young seedling plants from Messrs. Stephen and George Driver, of this city, whose brother brought them home, called upon these gentlemen, for any information they might possess. By furnishing his present address, Mr. R. procured from Capt. William Driver a letter from which the following extracts are selected.

*"Nashville, Tennessee, May 25, 1856.* Dear Sir,—Yours of the 12th, requesting information respecting the Norfolk Island Pines, I will cheerfully answer. In April, 1834, (while a resident at Sydney, New South Wales,) I procured the seeds from the mate of a schooner, which was direct from Norfolk Island. I planted them on the same month in a box filled with the light, rich, (natural) sandy soil. They made their appearance in four weeks, but they grew slowly, not over five inches in height that year, which was probably owing to their want of room, there being some fifty plants in a small box. I returned to Salem, Mass., in the *Black Warrior*, by the way of Cape Horn, October, 1835, and brought the seedlings with me. They seemed to enjoy the sea air, and some of them reached nine or ten inches in height, and were of a fine color. Spending but a few days at home, I was obliged to hand them over to my brother Stephen, who seemed incredulous of my accounts of their majestic growth and beauty.



They are known at Sydney, N. S. W. as the "Norfolk Island Pine," from which isle, they were introduced into Sydney.

They first attracted my attention on a few low, sandy islets on the coast of New Caledonia, ten degrees east of New Holland, between latitude 20° South of Tropic of Capricorn and 5° N.N.W. of Norfolk Island.

This species is there truly the King of the Conifers, rising into a beautiful cone to the height of one hundred and twenty feet above its sandy bed, and drinking in the mellow air of the ocean! As often as I ran my eye along that reef-bound coast, it always would rest with pleasure upon one of these trees, so strangely contrasting with the tropical growth around them. Some of thirty feet height, that I saw at Sydney, seemed to want the surf-cooled breezes to perfect them."

As an item of Horticultural information, pleasantly connected with our Salem history and with its gardens, the notice of these beautiful and majestic trees cannot be without interest to the Institute. It should serve to incite a similar laudable zeal to naturalize in favorable climates the useful and ornamental, even if the undertaking might cost a considerable care.

*Saturday, June 21, 1856.*

**FIELD MEETING AT TOPSFIELD.** An exploration of the ponds, streams and woods, such as the extreme heat of the weather would permit, having been made by several members in the forenoon, a session was held at 3 o'clock in the Hall of the Academy, several other members having joined the morning's party for the afternoon's object; the Rev. John L. Russell, Vice President, occupying the chair.

Records of preceeding meeting read.

Donations since the annual meeting, from the following persons, were announced :

*To the Cabinets.* H. F. Shepard, C. Cook, C. J. Lee, F. W. Putnam, J. S. Ives, Mrs. T. E. Payson, Charles F. Williams, J. F. Webb, jr., A. Page of South Danvers, F. Winsor, C. R. Waters, A. Brooks, E. S. Thayer, R. H. Wheat-

land, G. F. Austin, J. H. Vent, B. P. Chamberlain, J. S. Sibley, S. Jordan of Lynn, Charles Froebel of Cambridge, J. Wyman, of Cambridge.

*To the Library.* Joseph Chisholm, Henry F. Shepard, A. W. Dodge, of Hamilton, G. P. Bradford, P. Merrick of Boston, William Briggs, John H. Stone, D. A. White, Mercantile Library Association of New York, Amherst College, Jacob Batchelder, Mrs. Mehitable Ruee, W. H. Prince, B. P. Chamberlain, C. H. Hutchinson of Philadelphia, William Brown, M. H. Perley of St. John, N. B.

Letters were read from D. A. White, F. Winsor, G. B. Loring, C. H. Hutchinson of Philadelphia, Trustees of New York State Library, R. A. Merriam of Topsfield, Connecticut Historical Society, Smithsonian Institution, L. M. Boltwood of Amherst College, Trustees of Boston Athenæum, President and Fellows of Harvard University.

The following remarks were offered by the Secretary, Henry Wheatland :

It may not be known to many, who are here assembled, that twenty-two years have elapsed since a meeting of the Essex County Natural History Society was held in this place, for the purpose of completing its organization in the appointment of committees, &c.

This Society was organized at Salem, in December, 1833, by the adoption of a constitution, by-laws, &c. A circular was soon after issued, stating the objects of the Society, and calling public attention to the subject. In furtherance of this plan it was deemed advisable that a meeting should be called to convene at Topsfield,—accordingly the following notice was inserted in the newspapers :

**“NATURAL HISTORY SOCIETY.** The Essex County Natural History Society will meet at Topsfield, on Wednesday next, the 16th day of the present month, at 9 and 2 o'clock, to choose committees and to make arrangements for the ensuing season.

At the meeting the objects of the Society will be explained, and specimens in the various branches, with apparatus for their collection,

will be exhibited and illustrated—also, various plates and engravings, including some of the plates of Mr. Audubon's Birds of America.

Ladies and Gentlemen, who feel an interest in the objects of the Society, are respectfully invited to attend.

*Per order of the Curators.*

J. M. Ives, Secretary.

April 11, 1834."

I was not present at this meeting, but according to the records this programme was carried out.

In looking around I find that of those who were then mentioned as being present, only two or three are with us this day,—their places have been filled by others—some who were then the most active and energetic, and who contributed much to the promotion of these measures, have been called to their final resting place—others have removed to distant sections of the Union or to foreign climes—whilst others have, in consequence of age or other infirmities, been prevented from participating in these pursuits.

At this time, permit me to recall to your recollection a few of these early pioneers in the cause of science,—to whom we are so much indebted for what we now have and enjoy,—particularly of those who were instrumental in organizing that Institution, which in 1848 was united with the Essex Historical Society, under the name of the ESSEX INSTITUTE.

The first in order of time is BENJAMIN HALE IVES. It was in consequence of a communication from his pen, under the signature of ELAH, in the Salem Gazette, of Tuesday, Feb. 1, 1831, that first called public attention to the subject of organizing a County Natural History Society; other communications appeared occasionally, several of which were attributed to him, advocating the importance of Institutions of this character and the desirableness of encouraging a taste for the study of the natural sciences.

Mr. Ives was an enthusiastic naturalist, his attention was mainly directed to the study of Insects,—though he by no means neglected the collateral branches. If his life had been spared, he would have become very distinguished in this favorite pursuit, to which he devoted much of his leisure from the more arduous duties of business. He was only permitted to

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labor with us some two or three years, when death overtook him and he expired, after a very short and distressing illness, on Thursday, January 26, 1837, at the age of 30.

His cheerful temper, warm heart and cultivated mind, endeared him to all who knew him ;—an ardent lover and enthusiastic observer of Nature, he constantly saw in her wondrous beauty the reflected image of its Benevolent Giver. He was the youngest son of William and Mary (Bradshaw) Ives, and was born at Salem, November 8th, 1806.

The 2d, WILLIAM OAKES, of Ipswich—well known as the most distinguished Botanist of New-England. He was the son of Caleb Oakes of Danvers, and was born in that town, on the first of July, 1799. During his residence at the University of Cambridge, from which he received the degree of A. B. in 1820, his fondness for the pursuit of Natural History was developed under the instruction of the late Prof. Peck.

After having studied the profession of the law, he removed to Ipswich, where he remained until his decease, which took place on the 31st of July, 1848. The practice of the law, not being congenial to his taste, he relinquished it in the course of some two or three years, and devoted his time almost wholly to the study of Natural History ;—in this he soon excelled, particularly in the department of Botany.

The 3d, ANDREW NICHOLS, of Danvers,—one of the founders of our Society. He presided at the meeting of organization, December 16th, 1833, and was successively elected the President until his resignation in June, 1845. Since that time he had frequently been called to preside over our deliberations.

He was the son of Andrew and Eunice Nichols, and was born in the northern part of Danvers, on the 22d of November, 1785. He attended the district school there, and worked on his father's farm until the age of eighteen ;—at that time, evincing a decided taste for the study and investigation of the works of nature, and possessing a great desire to become a physician, he repaired to the Academy at Andover, and devoted two years to general study, preparatory to entering upon that of the profession. On the 11th of April, 1805, he entered the office of Dr. Manning, at Billerica, and continued with him,

during his successive residence in Cambridge and Harvard, until July, 1807, when he put himself under the instruction of the celebrated Dr. Waterhouse, and was with him at the time of the introduction of vaccination for the kine-pock into this country. In July, 1808, he entered upon the practice of the profession in the South Parish of Danvers, where he continued to reside until his decease on the 31st of March, 1853, retaining, through a long life the character of the good Physician and the respect and esteem of the community.

His early taste for the study of Natural History continued not only with unabated zeal, but seemed rather to increase in vigor and activity even to the last. He was particularly conversant in the local natural history of this vicinity—the geological formations—the flora—the fauna, particularly that of the reptiles, alike claimed his attention. Several communications from him, on the habits, &c., of the Batrachians, have been printed in the *Journal of the Society*. In all our excursions he took a very active part,—and his knowledge of localities of plants, &c., rendered him a very acceptable and pleasant guide and instructor;—to him we owe much, and to his suggestions we are greatly indebted for the success of these gatherings.

In the various movements of society, for the amelioration of the condition of man, he took a deep interest, and was always ready to contribute in aid of the same. We also find him, a pioneer with Pickering and others, in the organization of our County Agricultural Society, for many years its Treasurer, one of the Trustees, and the orator at the Cattle Show in Topsfield, on the 5th of October, 1820. In the Massachusetts Medical Society he was an active member, for many years a counsellor and the President of the Society for this district; he delivered the annual address in 1837, which was printed in their communications—subject, "Irritation of the Nerves." On other occasions, he manifested the same zeal and ready co-operation; and several addresses by him have been printed, which remain as memorials of his study and research in the fields of science and literature;—among these may be mentioned, a Masonic Address, at Danvers, in 1811; a Discourse on "Tem-

perance and Morality," in 1819; a Poem on "the Spirit of Free Masonry" in 1831; a Poem, on the occasion of the the Centennial Celebration in Danvers, on the 16th of June, 1852; &c.;—also several articles on medical subjects, which have appeared in the different medical journals.

May the memory of these gentlemen be long preserved;—and may the remembrance of their virtues, their enthusiasm and their zeal for science, serve to stimulate us to renewed exertions in the cause in which we are now engaged.

Mr. F. W. Putnam read a communication from Dr. DAVID F. WEINLAND, of Cambridge, Mass., on the Egg-Tooth of the Snakes and Lizards, as follows:

In the year 1858, I had an opportunity of studying the embryology of the European Ring Snake, (*Tropidonotus natrix*, Kuhl.) having found, in the beginning of August, some four or five dozen of her eggs. I watched the development of the embryos, opening the eggs from day to day. On the 26th of Aug. while looking over the eggs, I was surprised to find, in many of them, a long sharp slit through their thick leathery shell, not at all torn by the pressing of the embryo from within, as one would suppose, but, as I saw clearly enough, cut as if by a sharp knife. I took out the embryo and sought for a tubercle on the top of the snout, remembering the horny wart of the young chicken for the same purpose; but there was nothing to be found. While I was holding the little snake in my hand, it scratched my finger, and thus disclosed its cutting instrument—a single, very sharp and rather broad tooth, protruding a little way, nearly horizontally from the upper jaw (Fig. 1. b.) This tooth was about one millimeter (about  $\frac{1}{100}$  of an inch) long, and half as broad, fixed in a socket in the middle of the intermaxillary bone, which bears no other tooth. This two edged shovel-like knife projected a quarter, sometimes a half of a millimeter from the upper jaw, as the diamond of the glazier does from its handle. To a shovel it bears the additional resemblance of being concave above, convex below. The lower convex part is swelled up about the middle, resembling a bowl, which makes the odd profile view of the tooth (Fig. 5.) The two lower corners of it are generally rounded. Below and on the sides, the margin is sharp, cutting and transparent, while the thicker centre, containing the pulp of the tooth, is yellowish and dark. I have made a microscopical preparation of the egg

tooth of our common Black Snake, (*Coluber constrictor*, Linn.,) from an alcoholic specimen, procured for me by my friend, Mr. F. W. Putnam, of Salem. This preparation is drawn in the plate.

This egg-tooth represents in its structure all the characteristics of the teeth of snakes and lizards generally; and being at the same time small enough to allow a high power of the microscope, it is the best object I know, for studying that kind of teeth.

The central cavity is bottle-shaped, and is entirely filled with the yellowish pulp, in which were seen the contours of large balls. Upon and around this central pulp rests the hard tooth, flattened out about the margin, consisting of Dentine (*Substantia eburnea*) penetrated by its canals (*Canaliculi dentium*.) These canals, raying out from the cavity of the pulp towards the margin like a fan, open into that cavity, and contain, when fresh, a yellowish fluid, but soon they become white by drying and successive reception of air. They run out first in large, simple canals, often a little undulated; but soon they branch, and the branches anastomosing with each other, form a network of very fine capillaries. As this network does not reach the periphery of the tooth, there remains a broad margin entirely solid and transparent, like glass. This is the sharp cutting edge. From the analogy with other teeth, and from a view with a lower power of the microscope, one would suppose that this transparent margin was an enamel crown extending all over the tooth, but even with a very high power, I could not find any trace of the characteristic polygonal fibres, and we can state that this margin of the tooth is also composed of one and the same homogeneous dentine, as the rest.

There was no trace visible of either a blood-vessel or nerve reaching into this pulp. With man and mammalia, this is characteristic of a very old tooth; but with this egg-tooth, which is on the contrary very young, the drying of the nutritive organs indicates nothing but their short duration. After the drying and dying of these organs, and the consequent drying of the pulp and the fluid in the canals of the Dentine, the tooth is only held mechanically in its socket, and being not very deeply set, is rubbed off by the first violent contact. This process, of a sudden drying of life-imparting organs, is very like that by which the horns of the deer are cast off yearly.

The short duration of this tooth, for it drops in one or two days after the hatching of the snake, accounts for its having been overlooked by naturalists for so long a time. Even Rathke, in his beautiful work on the evolution of the Ring Snake, published in 1839, has made no mention of it, though he describes very

minutely the intermaxillary bone of the nearly developed embryo. Nevertheless it was not new. Already in the year 1841, J. Muller, as I heard afterwards from himself, had discovered it in alcoholic specimens of the fully developed embryos of snakes and lizards,\* and I am glad of confirming upon the living animal, and by microscopic investigation, the discovery of my highly esteemed teacher and friend.

I found afterwards the same tooth, (which we may call egg-tooth from its only function) in the embryos of all German Snakes and Lizards, in the viviparous *Vipera berus*, *Coronella austriaca*, *Lacerta crocea*, and *Anguis fragilis*, as well as in the oviparous Lizards, *Lacerta agilis* and *viridis*, and also in the American *Ameiva vulgaris*, *Crotalus Catesbaei*, and *Epicrates cenchris*; of which the two latter are also viviparous, and do not have the thick leathery shell which is found in all oviparous Snakes and Lizards. In the Crocodile, of which I investigated fine specimens, just hatching, in the Zoological Museum in Berlin, I could not find any trace of this tooth. This fact, stated already by J. Muller, shows again, with many others, that Crocodiles must be separated as a distinct order of reptiles from the genuine Lizards, and that the latter are nearer to the Snakes than to the Crocodiles. The eggshell of a Crocodile is like that of a Bird or Turtle, hard and very rich in lime, thus easier to be broken by the hard snout of the young, as with Birds and Turtles, by the horny wart on their bills; while the eggshell of the genuine Snakes and Lizards, which I afterwards investigated, is composed of several layers of very fine but strong fibres, felted together in a leathery elastic membrane (Fig. 6.) The time and manner of the formation of these fibres is not clear; some observations, however, made in the same summer, upon fresh eggs, seemed to me to show that they originate from cells. I saw in the felt, here and there, yellowish, oval bodies, generally provided with a small nucleus. I succeeded in separating some, and saw these yellowish bodies, clearly continued on one side into very long fibres. Thus these bodies seem to be the cells from which the fibres grow. Now these cells at the ends of the fibres were of different size, some being four times as large as the diameter of their fibres, and others not much thicker than the fibre itself. I suppose that this latter state was the end of the evolution of the cell, and so we understand why, at a later time, when the eggshell is fully grown, we no longer find these cells. (Some of these fibre cells or bulbs are shown in fig. 7.)

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\* See J. Muller, Archiv fur Anatomie und Physiologie.



I add to this description, some physiological remarks, in reference to the egg-tooth, in comparison with other organs of living organisms.

We often see in physiological papers the various organs and systems of organs, of the animal and vegetable body, treated in reference to the importance they bear to the whole economy of the living being. Every physician knows that there are many organs, most of them exterior ones, for instance organs of touch or locomotion, as fingers, hands, arms and legs, or even organs of the higher senses, as the tongue, nose and eye, which may be hurt or totally destroyed, without destroying necessarily the life, or even the health of the remaining organism. We know from experiments made in physiological laboratories, upon mammals or other vertebrates, that even some interior organs, as for instance, certain parts of the brain, the whole spleen, &c., may often be taken out without interfering with the health of the animal; while on the contrary there are other organs, as the medulla oblongata, the heart and the intestines, which are so important for sustaining life, that frequently a slight wounding of them is followed by death. This is one way of viewing organs, and certainly a very practical one. But there is another, if not so practical, certainly as philosophical, namely to compare the organs with one another, with reference to the history of the life of the individual, when they make their first appearance, when they begin to work, when they stop working, and when they fade away. We will allude here only to some instances. Let us consider any of the Vertebrates, after the fecundation of the egg, by the penetrating of the Zoospermia into it, and after the segmentation of the yolk is over. We see, as the first signs of the new being, a furrow more open on one side than on the other. This furrow is the birthplace of the future brain and dorsal marrow, the more open part at the anterior end being the future brain.

The sidewalls of this furrow begin to grow upwards and meet above, thus making a tube of the furrow; and it is very remarkable, that this closing takes place first in the very place, where the medulla oblongata is afterwards formed, this most delicate and most important part of the organism. Soon after this furrow is closed, we see a longitudinal, tube-like heart beating; and an intestine formed. We will not go into further details. We already see that just those organs, which are the principal supporters of the animal and vegetable life of the vertebrates, and which therefore remain through its life, are also those, which first make their appearance in the devel-

opment of the embryo. Now on the contrary other organs, for instance the senses, appear much later in the embryo, and generally fade away in the decrepitude of age, often long before death. Still shorter, and confined only to the best part of life, at least with mankind, is the activity of the reproductive organs, but the organs of far the shortest duration are found with Vertebrates in the embryonic period. The placenta of the young Mammalia, and the yolk placenta of the Sharks, are confined to the short period of the gestation of the young in the womb of the mother. The allantois of the Mammalia, Birds and Reptiles proper, the organ of respiration of the embryo as long as it is enclosed in the membranes of the egg, disappears as soon as the embryo is hatched. The interior gills of the tadpoles of our frogs, and their only locomotive organ, their strong tail, last only through their fishlike period of life in water, some weeks or months; the exterior gills of the same only for some days. Thus we may have a series of the duration of the organs of one individual. But there is hardly in any Vertebrate, another organ, which is so transient as the tooth of the hatching lizards and snakes, previously described. Its only function is to cut open the eggshell, which it may perform in the time of a second, and soon after it drops.

#### EXPLANATION OF THE PLATE.

FIG. 1 Head of the hatching Black Snake, (*Coluber constrictor*, Linn.) a. Snout, or rostral plate.

b. Egg-tooth. c. Slit of the windpipe. d. Tongue.

FIG. 2. The Egg-tooth with a part of the intermaxillary bone. (Natural size.)

FIG. 3. The same seen from above. (Magnified 125 times.)

b. The tooth. c. Intermaxillary bone, showing the little bone cavities, or bone cells.

d. The contour of the intermaxillary bone, appearing through from the lower side. e. Nutritive canals of the dentine.

FIG. 4. The same seen from above. (Magnified 350 times.)

a. Anterior excavation of the tooth.

b. Ramifying canals of the cement. c. Simple canals.

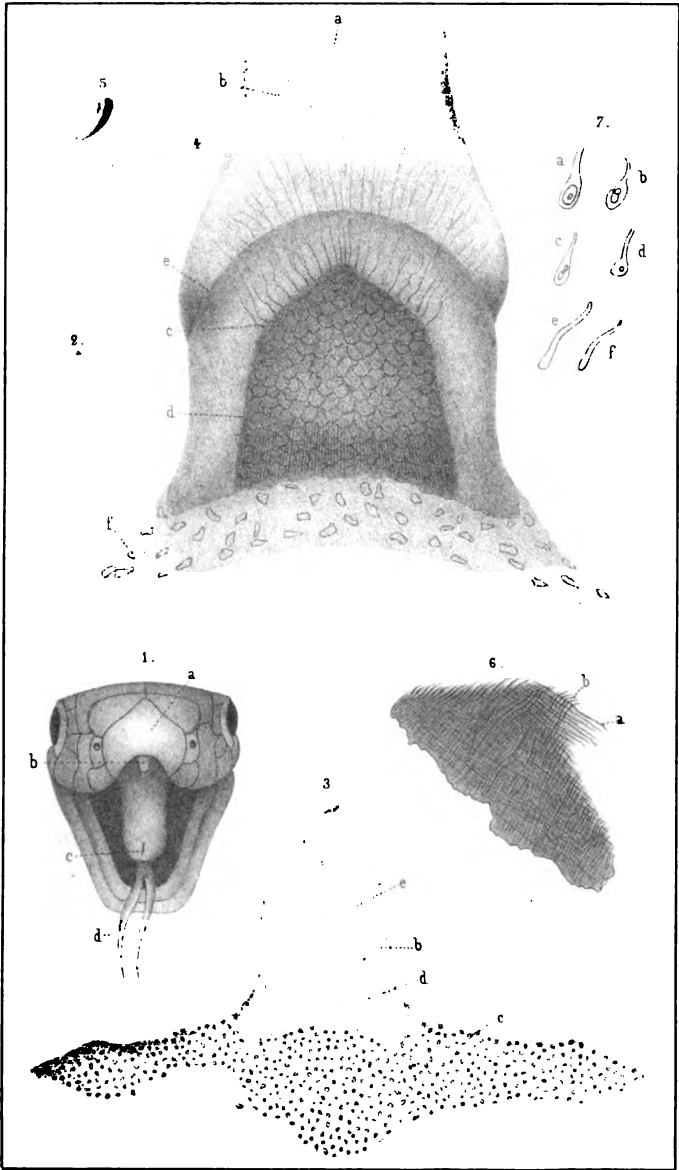
d. Pulp of the tooth. e. Margin of the bowl-like swelling in the middle.

f. Intermaxillary bone, with its bone-cells.

FIG. 5. The tooth alone, in profile. (Magnified.)

FIG. 6. Tissue of the eggshell, showing the crossing fibres, a and b. (Magnified 350 times.)

FIG. 7. a. b. c. d. e. f., several stages of the fibre-bulbs, taken from the fresh egg shell of *Tropidonotus natrix*, Kuhl.



Dr D. Weinland from nat.



Mr. George D. Phippen, of Salem, read, in part, a communication on the introduction of indigenous plants of this vicinity, into cultivation ; prefacing the same with some very interesting remarks on the pleasure and importance to be derived from a study of the natural sciences. Some very fine and large specimens of *Campanula glomerata*, collected in the morning's rambling, were exhibited, among other flowers of the season.

Mr. Samuel P. Fowler, of Danvers, followed Mr. Phippen, in remarks on the several subject matters of the meeting, which were listened to with attention—and the chair occupied a few moments with observations respecting the elevated position which natural science was occupying in education, in agriculture, in the arts and comforts of social life.

On motion of Mr. Phippen, it was then unanimously

*Voted*, that the thanks of the Essex Institute be presented to J. W. Healy, the Principal of the Academy, for the use of this Hall as a place of its meeting—also, to the scholars, and to those citizens of Topsfield who kindly proffered their assistance in furtherance of the objects of this session.

After some remarks, in reply, from Dr. R. A. Merriam, who signified his pleasure and gratification at the visit thus made by the Institute, and his surprise at the nature of the entertainment offered by it, and his regret that a larger audience had not participated, it was voted to adjourn.

The rapidly advancing season—the evidences of improving agricultural labors—the beautiful scenery, and the cordial welcome, together with abundance of lovely flowers by way-side and in woods, conspired to render the excursion one of profit and pleasure.

*Friday, July 18, 1856.*

**FIELD MEETING AT MANCHESTER.** Through previous arrangements made by Mr. JONATHAN FRENCH, jr., Principal of the Public High School, who was ready to receive the company arriving in the morning train from Salem and vicinity, a number  
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merous delegation proceeded in various directions as inclination or accident prompted. A party set out for an elevated rock near the village, from whence fine prospects were promised, enjoying on their way the delightful shade of the forest trees, and gathering the exquisite little blossoms of the drier woods. Others penetrated the swampy grounds, lured by the crystal water of the brook, hoping for the success of the angler, but fain to be content with meaner game. The geologists strayed away after rock formations, near the sea-beaten shores, to study the metamorphoses of these barriers to wind and wave. Yet others had in dim perspective a few scattering and lingering blossoms of the *Magnolia glauca*, spared at this late season of inflorescence in some shaded and wet sequestered copse of native shrubs, and still shedding its fragrance far and wide.

It was a source of no ordinary pleasure to be able to stand on the most northern limit of the growth of this fine and ornamental tree, probably near the very spot where its fragrant blossoms attracted the notice of the Rev. Dr. MANASSEH CUTLER, many years since.

The *Magnolia glauca*, according to MICHAUX, is common in New Jersey and Pennsylvania, and becomes more so in proceeding towards the Southern States. It is there seen only in the most miry swamps, which during the greater part of the year are so wet as to be impassable. Different species of *Az-dromeda* and *Vaccinium* accompany its occurrence. Its ordinary altitude is computed by that distinguished botanist, as from twenty to thirty feet, though in the neighborhood of the *pine barrens* of the Carolinas and Georgia, it sometimes reaches the height of forty feet. In the environs of Paris, France, it has proved sufficiently acclimatized to ripen its seeds freely.

The principal object of the amateur botanists of our party, this day, being to examine the grounds of the native habitat of the *Magnolia*, they were conducted by the kindness of Mr. French to the nearest locality on the limits of Gloucester. Here, in a sphagnum swamp, very near the main road, the horses and carriages were disposed of in safety: and, beneath a broiling sun, the limited range of the shrub at this place only

precluded a thorough exploration of other remarkable species, if any occurred. The average size of the magnolia shrubs, seemed to be about six feet in height, and in some instances they were quite broad or spread out widely; both their dwarfed and bunched aspects, probably, owing to the frequent mutilations to which they are subjected by those, who search for their blossoms. A few fine opening buds and flowers were found by our guide, who sought them with the keen and sagacious eye of one accustomed to notice and observe. The reporter of this account acknowledges his indebtedness to Mr. F.; and to Mr. Stephen Story, a neighbor of his, who accompanied him still deeper into the swampy places and pointed out some later specimens, varying from 12 to 15 feet high. These grew among *Alnus serrulata*, *Rhus venenata*, *Andromeda paniculata*, *Nemopanthes Canadensis*, *Leucothoe racemosa*, *Clethra alnifolia*, *Vaccinium corymbosum* and similar common species, in miry and wet blackened mud. This swamp was unexpectedly drier than usual and furnished excellent opportunity for observation. Mr. F. accompanied by a young lad (a pupil of his) penetrated into a more decidedly wet and miry lot, a mile or more distant, and brought some very fine blossoms and buds for the exhibition of the afternoon.

It is in the neighborhood of the former mentioned locality, that the beautiful *Parmelia brunnea* was, on this excursion, detected by JOHN L. RUSSELL, a lichen before known to him by specimens gathered by OAKES, whose habitat of the species is attributed by him as "Manchester, Essex Co., Massachusetts." Mr. R. obtained abundance of rich specimens from the sides of small, mossy stones, in shaded spots, and quite near the road side. Rewarded by the twofold treasures of the *Magnolia* and the *Parmelia*, the intense heat and parching thirst of the high-noon hour were little regarded. With garments saturated by perspiration and feet well begrimed with mud and miry vegetable soil, the party returned to the village—in the elevated and airy school rooms of which, joined by straggling sections from time to time, abundance of refreshments for the inner man, cool water and cooler breezes renovated each person, preparatory for the afternoon session of the Institute,—which

was called to order at 2 1-2 o'clock, Rev. John L. Russell, Vice-President, in the chair.

Previous to the reading of the records, the Secretary, H. Wheatland, read a report, detailing in brief the history and progress of the Essex Institute—and also an account of the origin of these Field Meetings, the first of which was held at North Danvers, in June, 1849, when the interesting localities of the *Vaccinium vitis idæa*, in that place, and of the *Andromeda polifolia* near Cedar Pond, in Wenham, were visited. The programme of this meeting was taken from the perusal of an account of the Berwickshire Naturalist Club in Scotland, which was composed of gentlemen who were interested in natural history, and were anxious to aid each other in their pursuits, and to diffuse a taste for natural science among others. This club met four times a year, the members coming together early in the morning, spending the forenoon in excursions, and meeting again at dinner, after which any papers which might be laid before them were read and discussed. With some modifications, meetings similar to these had been held by the Institute some two or three years, until death had thinned its ranks of some of its most distinguished members, when they were discontinued. Among the departed were Dr. Andrew Nichols, of Danvers, a fine naturalist, to whom allusion was made at a previous meeting, and Mr. Thomas Cole, of Salem, for upwards of thirty years a celebrated instructor of youth in the higher studies, and who, in the later years of his life, became quite distinguished in microscopic researches. He died suddenly in June, 1852. The meetings have been resumed by request of many enthusiastic young men who have recently become members of the Society.

In rambling through these woods to-day, the report continued, we are forcibly reminded of two persons who had for many years been adopted citizens of neighboring towns, and who have long since been numbered among the dead. They were both distinguished as botanists, and contributed much, in their respective spheres, to advance that science and to make us better acquainted with our native Flora—referring to Rev. Dr. Cutler and William Oakes—the former a minister in that part of



Ipswich, now known as Hamilton, who printed, as early as 1784, "an account of some of the vegetable productions naturally growing in this part of America, botanically arranged." This is considered the first attempt to classify and arrange the plants of this vicinity according to a scientific arrangement. He was the leader of the first expedition that migrated from this part of the country and formed a settlement on the banks of the Ohio—the first in the State bearing that name. He has also been considered one of the movers in the framing of the famous Ordinance of 1787. A memoir of this gentleman's life and labors is now in process of preparation by Rev. E. M. Stone, of Providence, R. I., formerly of Beverly. The other, William Oakes, was well known as the most distinguished botanist of New England. He selected Ipswich as his place of residence, after the completion of his studies of the law, which profession he soon abandoned for that of Natural History, more particularly Botany, which was more congenial to his tastes. It was in these woods, located between Gloucester, Manchester, Essex and Hamilton, where he so frequently wandered in quest of Flora's treasures, and where he devoted so much time and labor to ascertain their habits, and where he collected so many of those choice specimens which he preserved with so much care. Many of these he distributed during his life time, and, since his decease, large selections from his extensive collection have been sent to all parts of the civilized world—thus giving to these woods a world renowned reputation as one of the natural flower gardens of America.

The present flourishing condition of the Institute was then alluded to, and some remarks made upon the utility of museums, and their uses for educational purposes.

Donations to the Library were announced from W. R. Gavett, W. H. Prince, Miss E. Carlton, C. H. Hutchinson of Philadelphia, John H. Neal, Henry E. Pope of Indianapolis, Benja. W. Stone, E. L. Perkins, Boston Mercantile Library Association, Charles L. Peirson.

The cabinet keeper, F. W. Putnam, reported that donations had been received, to his department, from John H. Vent, F. W. Putnam, E. P. Emmerton, R. H. Wheatland, Israel Ward,

Miss R. Tannatt, C. Cooke, S. Tenney, C. G. Chever, William Silver.

Mr. George D. Phippen exhibited specimens of flowers, gathered by him during the morning's excursion, as one of the party to the Magnolia swamp. Among these were two species of *Drosera* or sun dew, growing out of the wet spongy moss or on the black mud, which had then become desiccated and cracked, or else from between the gaping cracks of the rude bridges which formed rough transits for sleds and wood teams. Its exquisitely tinted purple foliage and sparkling drops of secreted liquid, render this a favorite little plant to lovers of flowers. Also he showed *Clintonia borealis*, whose deep blue berries are so elegant when ripe: *Magnolia glauca*, already cited; *Kalmia angustifolia* and its nobler sister, the *Kalmia latifolia*; the Loosestrife, which frequents wet spots; *Naumbergia thrysiflora*; likewise, *Lysimachia quadrifolia*. *Prinos glaber*, the elegant evergreen leaved inkberry; the nightshade, or *Solanum dulcamara*; species of *Asclepias*, of *Lilium*, and snowy blossoms of the pond lily, that gem of our New England lakelets and slow streams, the *Nymphaea odorata*. Mr. P. accompanied the showing of his herborizations by suggestive remarks on the introduction of our indigenous plants into gardens—pointing out some as easy—others as difficult of artificial culture—their natural affinities to the plants and even vegetables of the farm; and interspersing numerous valuable and pleasing reflections adapted to the young—to pupils or others attached to our schools, to whom a study of the forms of vegetable-life would be salutary.

Mr. Samuel P. Fowler remarked, on the occurrence of the Magnolia so far to the northward—on the early history of its first notice in the vicinity of Gloucester—on his success in rearing it and kindred species in his garden, and on other rare trees attributed to the flora of Cape Ann, which should be diligently sought for by florists and local botanists.

Mr. John M. Ives produced from his bait box, the lovely *Linnaea borealis*, also species of Bladder-Wort, (*Utricularia vulgaris*, &c.) attracting his attention while exploring a reputed trout stream in the morning; his piscatorial treasures being at

greater discount than the *primroses* at the rivulet's "brim," which were more alluring than is usual to those, who seek the finny tribes; unless, like the honest Izaak, they love Nature as well. He spoke with much pleasure on his successes and exploits in other fields, and added to the interest of the meeting.

Benjamin F. Mudge, of Lynn, detailed his fruitless search for minerals, and pleasing observations on the geological structures of the rocks, of the vicinity, which constituted his morning labors. The trap dikes permeating the ledges, best seen where the ocean has denuded them, seemed to him to be of a peculiar interest. By this denuding process, aided by the shock of the seawaves, perhaps by frosts, one of these dyke veins has been so washed out that a fissure in the adjacent mass of about fifty feet in length and twenty or thirty feet deep, and its width being perhaps a foot or eighteen inches, is thus formed, attracting attention at once. Near the upper part of this rocky and narrow fissure, or rather ravine, constantly washed by every tide, and worn by natural means to this extent, are several large sienitic rocks, of an erratic or boulder appearance, which have been rolled down and over it so as to leave only narrow apertures for the eye to perceive the yeasty and chafing waves far below, and dashing beneath his very feet. Mr. Mudge's practical acquaintance with the geology of our ocean shores, rendered these, and other remarks of his, of much interest to all who listened to them.

Some question on the manner of growth of trees being raised, a desultory debate followed, participated in by the chair, by Messrs. Ives, Fowler, Phippen and others.

From the tenor of these questions, the chair was led to urge the importance of a more thorough understanding of the primary principles of vegetation and of the organic growth. This was all essential to the naturalist, while its intense interest made its relation to the study of Botany peculiarly appropriate. Even the instruction of this science in our Common Schools, though necessarily rudimentary, yet could be directed to this topic and aid much in engaging a wider and more engrossing attention to the general subject.

The following Vvertebrata were exhibited and remarked on

by F. W. Putnam, the results of his gleanings in the morning :

*Fishes.* *Gasterosteus* sp: quite abundant in a small stream : also, *Anguilla bostoniensis* ?

*Herpetological.* *Rana fontinalis* : very abundant. *Rana pipiens* in a tadpole state. *Emys guttata*.

*Ornithological.* Nest and eggs of *Fringilla melodia*.

On motion of Mr. S. P. Fowler, it was

*Voted*, that the thanks of the Essex Institute be tendered to Mr. Jonathan French, jr., the Principal of the High School, and to the pupils of said School, and to the citizens of Manchester, for their kind attentions during our meeting in this place.

*Voted*, to adjourn.

*Wednesday, August 27, 1856.*

At an ordinary meeting, held this day at noon, William H. Prince in the chair, NATHANIEL E. ATWOOD, of Provincetown, one of the State Commissioners on the artificial breeding of Fishes, being duly nominated, was elected a Corresponding Member.

*Saturday, September 13, 1856.*

**FIELD MEETING AT DANVERS.** A very warm day, ending in a thunder shower and much rain. The morning was spent in examining the woods, near the residence of Wm. A. Lander, to whose hospitable reception and welcome to his grounds the party were greatly indebted. The beautiful cemetery grounds were also visited by some, and the bright aquatic mosses, of the pebbly bottomed stream, which permeates these grounds, were examined and noticed. Here grew too, in still native luxuriance, the elegant *Gentiana Andrewsii* or Closed Gentian, in spots familiar to its appearance for many years to the venerable Dr. George Osgood. In the moister spots, under the wild copses, autumnal fungi were displaying their fugitive beauties.

The vicinity of Danvers is rich in many of our finest native flowers. It was here, that OAKES received his first lessons in that science, which has made his name famous in New-England's Flora. The tall richly laden stalks of the yellow *Gerardia*, so abundant in the drier woods, were the subjects of his first herborizations. There they still blossom, year by year, associated with such pleasant memories. The graceful and delicately tinted *Orchis fimbriata* (Pursh), grows abundantly in a wet meadow, well known to frequenters of the spot in search of its blossoms; where also may be found the *Trillium cernuum*; the exquisite maiden's hair fern (*Adiantum pedatum*) nods upon the shady rocks, mixed with the red and the white berried Cohosh (*Actæa rubra et alba*), the *Vaccinium* *Vitis* *Idæa* displays its roseate corols and nestles among the short turf beneath the stunted white-birch bushes contiguous; and each season, furnishes ample material for the searcher for flowers, from the appearance of the tiny *Draba verna*, on the middle of March, to the fading foliaged but golden tressed and filamentous blossoms of the mysterious witch-hazel bursting into reluctant and coyish display, as the frosts of autumn warn us that the year's melancholy days are at hand.

Previous to the hour of the afternoon's session, a numerous company had met at the Hall of the Holten High School House, among which were the pupils of the school, who had been busy in making ready for the occasion. At the hour of 8 o'clock, the Institute was called to order by Rev. John L. Russell, Vice President, and the Records of the preceeding Field Meetings and other regular intervening meetings, were read by the Secretary.

Mr. Samuel P. Fowler suggested a correction of the record of the previous meeting, to the effect that to Judge PARSONS belongs the credit of first detecting the *Magnolia glauca*, in the Gloucester woods; and that the Rev. DR. CUTLER first brought it into more general notice.

Letters were announced or read from Pennsylvania Historical Society, D. M. Balch, C. L. Flint, Sec'y. of Massachusetts State Board of Agriculture, Boston Athenæum, Connecticut  
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Historical Society, J. Wyman of Harvard University, G. B. Perry of Groveland, and A. P. Chute of Lynnfield.

Donations were announced *to the Library*—from G. F. Chever, H. M. Bertram, C. L. Flint Sec'y. of Massachusetts State Board of Agriculture, Miss Mary O. Pickering, City of Salem, S. C. Phillips, E. S. L. Richardson of Kendall Ill., N. B. Shurtleff of Boston, Jacob Batchelder, Boston Society of Natural History, James Macauley of Frankfort, N. Y., J. B. Felt of Boston, Wm. J. Carlton, B. W. Stone, Emory Washburn of Harvard University, James Kimball, Mrs. J. P. Saunders, Massachusetts Legislature, C. Foote, C. W. Upham, *To the Cabinets*—from H. F. Pratt, L. R. Stone, J. Tallant, W. C. Alden, W. Ives, W. J. Chever, P. Davis, Charles Derby, Charles Osgood, Henry F. Shepard, S. Jillson of Lynn, P. D. Allen, A. J. Brooks, J. L. Russell, S. B. Buttrick, J. A. Emmerton, Miss Howe of Marblehead, R. Brookhouse, jr., E. L. Perkins, Joseph True, F. W. Putnam, N. E. Atwood of Provincetown, R. H. Wheatland, Amory Holbrook of Oregon City, L. Upton of Springfield, Miss S. L. Whittridge.

On being called upon by the chair, Dr. GEORGE OSGOOD, long a resident of the town, presented to the meeting some interesting reminiscences of the lives and botanical pursuits of Rev. Manassah Cutler of Hamilton, of Dr. Andrew Nichols, and of William Oakes. His intimate acquaintance with these persons gave a zest to his observations. He spoke of his own delight in finding any new flower; and of the great advantage such a taste had been to him in adding or in furnishing employment and relief amid the severer duties of his profession, when called to distant parts of the town or of the county. By this constant observation, from season to season, he could visit certain spots, even after years intervening, confident of finding some particular species; and had marked the spreading of other species over areas as they had been more and more naturalized. Even at his advanced period of life, a herborizing tour of a few miles walk, or a ramble in the woods gave an elasticity to his step and seemed to impart a new vigor to his sight, enabling him to notice both the familiar and the unusual.

Dr. O. felt the importance of the study of Botany in the fam-

ily, especially by school-girls, inducing a love for outdoor exercise, for purer air, for beautiful scenery, for delicate and refining tastes; and aiding the physical system in preparing them for healthy and useful lives. He suggested its study in the Holten High School,—and was invited by Mr. HILLS, the principal, to come into his school and try the experiment for himself, by lecturing or teaching at such hours as were convenient to him.

The darkening western sky and the distant roll of the thunder, suggested to the prudent and timid of our visitors to seek their homes, while a few remained with the members of the Institute, to continue the session until near the arrival of the train for Salem.

On re-assurance of the expediency of further prolongation of the meeting, Mr. Geo. D. Phippen, the collecting botanist of the morning party, described, briefly, some of the wild flowers met with by him, and commented on their adaptedness to the garden. He presented the *Gerardias*, *Coreopsis*, *Gentiana*, *Chelone*, various *Asters*, *Solidago*, &c., &c., and offered some general remarks on the natural character of their scientific arrangements.

Hon. Benj. F. Mudge, of Lynn, presented to the meeting a variety of Carbonate of Lime, of a beautiful red color, which he had this morning detected in the cavities of an erratic rock of trap. He spoke of the igneous features of the trap rocks, and of the interest attached to the study of those strata, the familiarity with which made them indifferent to us, unless our attention were directed to more careful notice.

Mr. Samuel P. Fowler showed to the audience a specimen of the Rattle-snake (*Crotalus*,) preserved by him by a sort of tanning. He seemed much interested in the occurrence of this dangerous reptile as a fine instance of our native fauna; spoke of some of its habits as known to him, and said that, according to his observation, its favorite haunts seemed to be in and about the loosely lying bowlders situated upon our granite ledges. The present individual was killed near the Danvers Alms House, a few weeks previous.

A notice, by the Secretary, of the capture of a fine specimen

of *Phoca Virulina* or the seal of our shores, near Marblehead, was made to the Institute.

Mr. Augustus Fowler, who had been engaged, for some years, in observing and figuring our native birds, with their nests and eggs, exhibited his drawings to the audience.

The following letter, from the Rev. Gardner B. Perry, of Groveland, on being read, was referred to a committee of Messrs. Jacob Batchelder, Samuel P. Fowler, Benj. F. Mudge, Richard H. Wheatland, and Lincoln R. Stone, to investigate the subject and report at some future meeting.

*Groveland, August 15th, 1856.*

HENRY WHEATLAND, M D., Secretary Essex Institute :

*Dear Sir*—I am confident you will excuse me, when I ask your attention to a subject which cannot be otherwise than interesting to you. I refer to the unusual manifestations of the Electrical Fluid, which have been witnessed in this country, and as I suppose generally through New-England. These manifestations, I think, have been more frequent and penetrating, of larger volumes, of greater force, and more effective, when its powers have been concentrative on any particular object than usual, and at the same time its scintillation, oblique shafts, have been more numerous and diversified in shape, and motion, than is common in this region of country, while the general color of the elements, has been deeper, and more vivid. These facts I regard as important and interesting—interesting and important, whether we look at them in their physical cause or effects in the animal feelings and changes they produce, or in the mental anxieties which they spread widely over the community, when this wonderful element, by its unfoldings, doth shake terribly the earth.

Now, dear sir, feeling confident that these facts can hardly have escaped the notice of any, and when noticed must be regarded as of much interest, you will permit me to ask if there are not many circumstances connected with them which deserve the special attention of those who wish to understand the laws of the material world, so as to secure the benefit, which when properly understood and regarded, they bestow, and show the evils, which a neglect of them must and will follow; and whether an inquiry into them, may not justly claim the attention of the Institute. A great number of enquiries will naturally crowd themselves upon the mind of those who may turn their atten-



tion to the subject. I will suggest a few, which may answer as a word to the wise.

1st. Has the exemption of buildings from the effects of lightning rods been such as to justify the general confidence reposed in them.

2d. Have not single trees and groves afforded greater protection than the metal rod.

3d. Whose constructed rods have apparently afforded the greatest security.

4th. Are some trees better conductors than others? as the elm for instance than the pine, and therefore more efficient protectors.

5th. Is the amount and operations of the electric fluid considerably affected by the growing and ripening harvest.

And now, dear sir, if the subject of this letter, in your opinion, accords with the various useful investigations in which that body is wisely and successfully directing its inquiries, will you, as its Secretary, communicate it to the Essex Institute, and oblige one, who cannot but hold you in high estimation, when I know the wise efforts you are making to widen the circle of human knowledge.

Very Respectfully, Yours,

GARDNER B. PERRY.

The usual vote of thanks from the Institute was tendered to Mr. Hills, and to his pupils, for the use of the school room and for their attentions during this meeting.

*Wednesday, October 15, 1856.*

**FIELD MEETING AT LYNNFIELD.** A bright sunny day and a numerous attendance. Parties detailed themselves into various explorations; some stopping at SHIP ROCK and traversing the intervening woods along the Railroad track; others working their devious ways among tangled underbrush and thickets; picking here and there a bright autumn leaf discolored by some parasitic fungus in scattered spottings over its surface; making conjectures on the probable amount of nutriment in the dry

*tripe des roches* so abundant on the bowlders; amusing their sense of taste with crumbs of the Bitter Lichen (*Pertusaria amara*) wonderfully similar in sapidity to quinine; gathering twigs of the Hamamelis Virginica, now in rich beauty—the flower, the dying leaf, the ripened seed, and the next year's bud on the same stem! till at length, by severe scrambling, the summit of ROBBIN'S rock is reached and the wide landscape bounded on the horizon by mountain and hill and with intervening forests, dotted with spires in villages, lay serenely in the autumn's noon.

The hour of one P. M., brought in the straggling parties to the hospitable mansion of the Rev A. P. Chute, where around a well spread table, whose viands were contributed, *a la* pic-nic; after divine blessing was craved, refreshing cheer of food and conversation wore away the hour.

Summoned by the arrival of the time of adjournment, the party, re-enforced by others from abroad, repaired to the place of meeting, and Rev. John L. Russell, Vice-President, assumed the chair.

Records of preceeding Field Meeting read. Donations announced. *To the Library*—from W. H. Prince, Messrs. Tenney and Rice of Boston, J. V. Browne, James P. Kimball, Warren & Co. of Sacramento, Cal., S. Tufts of Swampscott. *To the Cabinets*—from Henry Cuming of London, J. G. Anthony of Cincinnati, O. N. A. Frye, R. Brookhouse, W. C. Barton, J. Dalton, J. W. Chever, C. B. Haddock of Beverly, J. M. Ives, Geo. E. Planders, Mrs. J. D. Treadwell, C. L. Peirson, Edward Pousland, John C. Lee, John Price of Manchester, J. S. Ives, Samuel Tufts of Swampscott.

Letters were read from Jona. French, jr., President and Fellows of Harvard University, J. G. Anthony of Cincinnati, O., Smithsonian Institution, James P. Kimball.

A series of remarks were made by several members present. Of these were interesting observations by the Rev. A. P. Chute, whose residence in this part of Essex County for several years familiarized him with many of its most prominent natural productions. The plants noticed by him during the past summer, of particular interest were *Parnassia Caroliniana* or

**Grass of Parnassus.** That so singular a name should have been given to a beautiful plant with large greenish white flowers; not unlike in shape to a butter-cup, and having near the ground one or two thickish ovate or rounded leaves, may not appear so strange when we recall its classic origin, being identified in the European form with a plant described by Dioscorides, and attributed to mount Parnassus, whose swampy summit and elevated position may be favorable to its presence. The use of the word *grass* is only in conformity with vegetation; similar to the expression of scripture in "grass of the field." Some years since this species was growing near Burley's farm in Danvers; its occurrence in Lynnfield is interesting to our flora. Mr. Chute finds here also *Epigæa repens* or the May flower of Plymouth woods, *Asclepias obtusifolia*, *Bartonia tenella*, *Good-yera pubescens*, *Gymnadenia tridentata*, *Platanthera flava*. *Pl: ciliaris* *Pl: blephariglottis*, *Liparis Loeselii*. *Arethusa bulbosa*. *Vaccinium oxycoccus*, *Dianthus armeria*, *Silene inflata*. *Stellaria borealis*, *Polygala verticillata*, *P. cruciata*, *Potentilla fruticosa*, *Eupatorium teucrifolium*, *Coreopsis trichosperma*, *Clematis Virginiana*.

Of minerals, the town of Lynnfield cannot be considered as a rich location, yet as worthy of his private cabinet Mr. C. exhibited specimens of Chlorite, Epidote, Smoky Quartz (crystals) Graphite Granite, Fluor Spar (white and purple) Flesh-colored Felspar, Albite, Iron Pyrites, Crystals of Felspar, Magnetic oxide of Iron, Carbonate of Iron, Magnesite, Serpentine, Manganese.

Mr. C. had found very fine specimens of the shells of Lynnfield, such as very beautiful varieties of *Anodon fluviatilis*, *Unio complanatus*, *Unio radiatus*, *Planorbis Campanulatus*, *Pl: lentus* *Pl. bicarinatus*, *Physa heterostropha*, *Limnæa columella*, *Cyclas similis*, *Helix arborea*, *H. chersina* (a single specimen) *Succinea ovalis*.

F. W. Putnam, procured, in his researches, a lively specimen of the striped Snake (*Tropidonotus sirtalis*), a cultivation of the acquaintance of which, caused some little consternation among the gentler sex; also some fishes were among his spoils, such as *Perca flavescens*, and *Catostomus Bostoniensis*.

On invitation, General Josiah Newhall, of Lynnfield, spoke of his interest in the study of Natural History—of his love for plants in particular, to which his avocations in the field and on the farm would lead him, independent of his inclinations—of the tendency of such studies in educating the mind and the heart, and wished the future prosperity of the Essex Institute, whose present meeting had afforded him so much satisfaction.

Mr. Jacob Batchelder, in the course of his remarks, alluded to the duty assigned him at a previous meeting of investigating, with others, the various topics concerning Electricity, suggested by the great number of thunder-showers during the last summer; and announced his plans to enter upon the duty thus committed to him, and to report at earliest convenience.

Mr. Geo. D. Phippen spoke at some length on his favorite topic, of his taste for native flowers, and pleasure in experimenting on their cultivation, with the instances of his success, and was listened to with attention and interest.

The chair concluded the meeting by allusions to the incidents of the day; and after a general desultory discussion on several topics the Institute adjourned, after passing unanimously a hearty vote of thanks to Rev. Mr. Chute and his family, for their hospitable and delightful welcome.

*Friday, November 14, 1856.*

An adjourned quarterly meeting of the 12th of November was held this evening, at half past seven o'clock. George D. Phippen in the chair.

Records of preceding meeting read.

Letters were read from Pennsylvania Historical Society, Solomon Peck of Boston, C. B. Richardson of Boston, Samuel Tufts of Swampscott.

Donations announced, since the meeting of the 15th of October: *To the Library*—from Henry E. Joscelyn, Henry M. Brooks, James Kimball, John L. Sibley of Harvard University, Miss M. Dahrymple, Jonathan Perley, jr., Solomon

Peck of Boston, Mrs. J. D. Treadwell. *To the Cabinets*—from Wm. G. Webb, Mrs. J. D. Treadwell, George F. Read, John Ball, D. S. Emmerton, J. S. Shatswell, D. M. Balch, S. R. Curwen, First Church of Beverly by R. Ratoul.

Samuel P. Fowler, of Danvers, occupied the hour in reading an elaborately and minutely prepared account of the Life, Character, &c. of the Rev. SAMUEL PARRIS, of Salem Village, and of his connection with the Witchcraft Delusion of 1692.

Mr. Parris, whose history is so intimately connected with the Salem Witchcraft delusion of 1692, was a son of Thomas Parris of London, and was born in 1653. He was a member of Harvard College, but did not graduate at that Institution. He was at first a merchant in Boston, but not succeeding in business he left it, and offered himself as a candidate for the ministry.\*

The people at Salem Village, being without a pastor, on the 15th of November, 1688, sent a committee, consisting of three persons, viz: Captain John Putnam, Mr. Joshua Rea, sen., and Francis Nurse, "to treat with Mr. Parris about taking ministerial office." Nothing was done however at this meeting towards effecting a settlement, and on the 25th of November, after the services in the afternoon, the audience was stayed, and by a general vote, requested Mr. Parris to take office. On the 10th of December, 1688, the brethren of the church, sent Lieut. Nath'l Putnam, Sergeant Fuller, Mr. Joshua Rea, sen., and Sergeant Ingersoll, who came, they said, "as messengers to know whether Mr. Parris would accept of office." He replied, "ye work was weighty, they should know in due time." After this, several came on like errands, but as yet, no proposals of maintenance were tendered.

On the 29th of April, 1689, Deacons Nath'l Ingersoll and Edward Putnam, Daniel Rea, Thomas Fuller jr., and John

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\* "Any Person, who knew Mr. Samuel Parris. formerly of Barbadoes, afterwards of Boston, in New-England, Merchant, and after that, Minister of Salem Village, &c., deceas'd, to be a son of Thomas Parris. of the Island afore said, Esqr,—who deceased 1673, or sole Heir by Will to his Estate in said Island,—are desired to give or send notice thereof to the Printer of this Paper; and it shall be for their advantage"

[*Boston News-Letter*, No. 1433, July 15th, 1731.

Tarbell, came to Mr. Parris, from the meeting house, where there had been a general meeting of the inhabitants, and said, "being the aged men had had the matter of Mr. Parris's settlement so long in hand, and effected nothing, they were desirous to try what the younger could do. Upon Mr. Parris's asking them what their will was, they answered "they were sent, by ye people to desire him to take office, and had concluded to offer him sixty pounds for his salary." Twenty pounds of which, was to be in money, and the remainder as follows: Wheat at 4 shillings per bushel, Indian Corn at 2 shillings per bushel, Barley, Rye and Malt at 3 shillings per bushel, Pork at 2 pence per. pound, Beef at 1½ pence per. pound.

The committee being desirous of a speedy answer, Mr. Parris informed them, that he would accept of their proposals, provided they would comply with the following provisions for his maintenance: 1st, "When money shall be more plenteous, the money part to be paid me, shall accordingly be increased. 2d, Tho' Corn or like provisions should arise to a higher price than you have set, yet for my own family use, I shall have what is needful, at ye price now stated; and so if it fall lower. 3d, The whole sixty pounds to be only from our inhabitants, that are dwelling in our bounds, or proportionable to what lands they have, within ye same. 4th, No provision to be brought in, without just asking whether needed, and myself to make choice of what, unless ye person is unable to pay in any sort but one. 5th, Fire wood to be given in yearly freely. 6th, Two men to be chosen yearly to see that due payments be made. 7th, Contributions each sabbath in papers, and only such as are in papers, and dwelling within in our bounds, to be accounted as part of the sixty pounds. 8th, As God shall please to bless ye place, so as to be able to rise higher, than ye said sixty pounds, that then a proportionable increase be made. If God shall please for our sins to diminish the substance of said place, I will endeavour accordingly to bear such losses, by proportionable abatements of such as shall reasonably desire it."

These proposals of Mr. Parris to the committee were read to them and accepted, and they expressed their belief, that the inhabitants would approve of them. But it would seem that at a meeting of the people of the village, May 17th, 1689, Mr. Parris was sent for, when objections were made against the 5th and 7th provisions of his settlement. "Touching the 5th it was objected, they had no commons, and therefore could not conveniently give in fire wood, because some must bring in ½ cord, others more, others less, &c. Therefore they would allow six pounds per annum, one third money, which would buy 30 cords,

as they had dealt by former ministers. Parris replied he was willing to ease them, but then he desired, that one of them would take the six pounds annually, and furnish him with 80 cords of wood, to which proposal he found none of them willing to consent. He then told them, if he did accept the six pounds, it might in time be insufficient to purchase six cords of wood. In reply to the fears of Parris in regard to the rise of the price of wood, he says, I had a general answer from many that at 4 shillings per cord, I should be supplied during my life among them. He continues, after much urging, I replied I would try them for one year. Mr. Parris says, "touching his 7th provision, nothing at the time was said or objected against contributions by papers, for it had been their former usual way, but only against those, that dwelled within their bounds, they urging that some did not live within their bounds, yet they were constant hearers, and therefore it was meet to have their help.

In fine, after much agitation here, it was agreed on my part and theirs, that such out persons had liberty to please themselves, in paying to the minister or the meeting house. And so I left them, fully acquiescing with my aforesaid conditions, not doubting but that they had truly entered it on the records, as I took for granted, nor heard any thing otherwise, till after my ordination a good while, in another public meeting of ye village; when another vote, recorded and read, vastly different from the agreement, as above said—which I then openly did, and still must deny, to be any contract of mine."

We have now presented Mr. Parris's account, of the transactions between himself and the people of Salem Village, in regard to his settlement. This was drawn up by him, and used upon his trial before the Court of Common Pleas at Ipswich in 1696-7. We have been thus particular in relation to the settlement of Mr. Parris at Salem Village, it being one of the causes, which led to the most bitter parochial quarrel, that ever existed in New-England, and in the opinion of some persons, was the chief or primary cause of that world-wide famous delusion, the Salem Witchcraft.

Salem Village, now embraced in the parish of Rev. Dr. Mil-ton P. Braman, in Danvers, Massachusetts, was, on the 19th of November, 1689 (when the Rev. Samuel Parris entered upon his duties there as a Pastor and Teacher,) a small hamlet or village, inhabited principally by farmers, but embracing within its limits, much adjoining territory, extending its lines to Wills Hill, now Middleton, there being many families who attended worship at Salem Village. The number of rateable polls in the parish were 100. It appears, from the records,

that Mr. Parris presented to his church, upon his settlement, a new covenant and form of admission for its members, together with the question, who were the proper subjects of baptism. These caused some debate in the Church, but none opposed the final action upon them. Some singular and unusual cases of discipline came before them, but they appeared to have been disposed of peaceably. It was not until the 8th of October, 1691, that we discover any unfriendly feeling, existing between Mr. Parris and his people. It was on that day, he says in his church records,—“Being my Lecture day after public service was ended, I was so bare of fire wood, that I was forced publicly to desire the inhabitants to take care that I might be provided for, telling them, had it not been for Mr. Corwin (who had brought wood, being here at my house). I should hardly have had any to burn. Upon the pastor's informing the church of his destitution of fire wood, the brethren raised a committee, who were instructed to see the town committee, and desire them to make a rate for the minister. The committee on rates met November 10th, 1691, and reported that they did not see good cause to take notice of the church committee, without they had a letter to show, under the church and pastor's hand. Upon this, Mr. Parris complained of the treatment of the committee towards him, but more especially the church, whom he said manifested an indifference in this affair. The committee, whose business it was to raise a tax to procure the pastor's wood, still continuing to refuse to do it, on the 27th of December, 1691, a petition was sent to the Quarter Sessions, wherein the petitioners complain, that “no reparations of the Village Meeting House has been for a great while regarded, so that broken windows, stopt up some of them by boards or otherwise, and others wide open, and is sometimes so dark, that it is almost *unuseful*.” The Court, upon this petition, appointed a meeting of the inhabitants of the Village, to choose a new committee to meet on the 25th of January, 1692, for the purpose of assessing rates to repair the meeting house, and procure the pastor's wood. The inhabitants of the Village met on that day, and made choice of Joseph Pope, Joseph Holten, jr., John Tarbell, Thomas Preston, and James Smith, as their committee.

This is the last we hear about this affair of procuring wood, &c., probably all further considerations of it was absorbed in the great witchcraft delusion, which was now close at hand, and about to break forth.

We are now brought to the period of the commencement of Salem Witchcraft, as it first developed itself in the family of Samuel Parris, Minister at Salem Village in 1692.



Mr. Parris's household consisted, at this time, of himself and wife, his age being 39 years, that of his wife 44 years, a daughter Elizabeth, aged nine years, a niece of eleven years by the name of Abigail Williams, and two servants named John Indian, and Tituba his wife, both natives of South America, then called New Spain. These were held as slaves, and Parris probably came in possession of them, in some of his commercial transactions. By some persons, these Indians have been supposed to belong to the aborigines of our country and to have obtained their knowledge of witchcraft from the Indian powows; but this appears to have been a mistake. Mr. Parris's nearest neighbors were Capt. Jona. Walcut, who had a daughter called Mary, 17 years of age, and his parish clerk. Thomas Putnam, who had a daughter named Ann, aged 12 years, and a servant girl, living with him, named Mercey Lewis aged 17 years, Mary Warren, aged 20 years, lived with John Proctor, Elizabeth Booth, aged 18 years, lived near to John Proctor, Sarah Churchill, aged 20 years, lived in the family of Geo. Jacobs, sen., Susannah Sheldon, aged 18 years, lived in the Village. These girls, together with Abigail Williams, a niece of Mr. Parris, aged 11 years, were in the habit of meeting in a circle in the village, to practice palmistry, fortune telling, &c. It appears by evidence, given at the Courts, that some of their parents and guardians did not approve of these meetings. Mary Warren, one of the most violent of the accusing girls, lived as we have before said, with John Proctor, and at last became his principal accuser, upon his examination for witchcraft. Proctor, out of all patience with the meetings of the girls, composing this circle, one day said he "was a going to the Village to bring Mary Warren, the jade, home; for, if let alone, these girls would make us all *Devils and Witches together quickley*. They should rather be had to the whipping post; but he would fetch his jade home, and thrash the devil out of her." Proctor said, when Mary Warren was first taken with fits, he kept her close to the wheel, and threatened to thrash her, and then she had no more fits; but the next day, he being gone from home, she had her fits again. If the accusing girls had been dealt with as John Proctor would have had them, we probably should have had a short story to tell, about Salem Witchcraft. It is at the meeting of this circle of eight girls, for the purpose of practising palmistry and fortune telling, that we discover the germ, or the first origin of the delusion. We have endeavored to follow them after the excitement had subsided, for the purpose of ascertaining their character, in after life. One only of this circle, Ann Putnam, confessed her folly, and sought forgiveness.

Some of them grew up licentious in their habits, and all of them appear to have sought obscurity. Their whole course, as seen in their depositions, discloses much malignancy, and their ignorance was so great, that of the eight accusing girls, six of them signed their names with a cross.

It was in the latter end of February, 1692, that the daughter of Mr. Parris, named Elizabeth, aged 9 years, together with his niece, Abigail Williams, aged 12 years, were taken sick and received such attention from Mrs. Parris as their case seemed to require. But growing worse under her treatment, and not being able to ascertain what their disease was, application was made to their family physician, Dr. Gregg, living in the Village. He visited them, and observed that they were afflicted with a sad distemper, the name of which he could not tell. Other physicians were called in, in consultation, when one of them gave it as his opinion, that the children were under an evil hand. It is probable that it was Dr. Gregg that supposed the girls bewitched, for he had expressed the same opinion of many of his patients when he could not understand their disease, many times before. It is highly probable that the opinion of these physicians went far to form the belief of not only Parris, but also of his ministerial friends, in the existence of witchcraft in the village. Mr. Parris appears to have been much astonished, when the physicians informed him, that his daughter and niece were, no doubt, under an evil hand. There is evidence that Mr. Parris endeavored to keep the opinion of the physicians a secret, at least, till he could determine what course to pursue. At this time, Mary Sibley, a member of his church, gave directions to John Indian how to find out, who bewitched Betsy Parris and Nabby Williams. This was done without the knowledge of Parris. The means used to make this discovery, was to make a cake of rye meal, with the urine of the children, and bake it in the ashes, and give it to a dog to eat. Similar disgusting practices appear to have been used to discover and kill witches, during the whole period of the delusion.

On the 27th of March, 1692, Mr Parris called together his church, when he presented testimony against the error of sister Mary Sibley, in giving direction to John Indian in an unwarrantable way, to find out witches. Upon Mary Sibley's manifesting sorrow and grief for her conduct, the brethren of the church received satisfaction. By the diabolical means thus used by Mary Sibley, Mr. Parris supposed the devil had been raised, and seeing the apparent distressed condition of his family, and not knowing what course to pursue, requested some

worthy gentlemen of Salem, and some neighboring ministers to consult together at his house; who when they came, and had inquired diligently into the sufferings of the afflicted, concluded they were preternatural, and feared the hand of Satan was in them. The advice given to Parris by them was, that he should sit still and wait upon the Providence of God, to see what time might discover; and to be much in prayer for the discovery of what was yet secret. They also examined Tituba, who confessed the making a cake, and said her mistress in her own country was a witch, and had taught her some means to be used for the discovery of a witch, and for the prevention of being bewitched, &c. But said she herself, was not a witch. Soon after this, there were two or three private fasts at Parris's house, one of which was kept by the neighboring ministers, and another in public at the village. And one general fast, by order of the General Court, observed throughout the Colony, to seek the Lord, that he would rebuke Satan, and be a light unto his people in this day of darkness.

It is evident from the account given by Rev. John Hale, who was an eye witness to many of the transactions at Salem village, and one of the ministers called for consultation, that Mr. Parris proceeded with caution at the commencement of the troubles, and was anxious to seek council and advice. He likewise wished to inform himself on the subject of witchcraft, and for that purpose received as a loan from Dea. Robert Sanderson, of Boston, a copy of Perkins' works, which treated upon that subject.

We are among those who believe Mr. Parris was honest in his belief in witchcraft, and that he was not moved in this affair by personal malice, or the desire to promote the cause of religion in his Parish, as has been supposed by the author of the History of Danvers. We have not as yet, found a particle of evidence, that he entertained ill will against those who were accused and executed.

Mr. Parris, in common with his ministerial brethren, appears to have come, after the confession of Tituba, to the full conclusion, that witchcraft had broken out in his Parish, and that the Devil had commenced his operations in his own family; and as a faithful pastor, he should not hesitate, for a moment, to grapple with the enemy.

It was in this point of view, that we discover the courage of the people of Salem Village, who were engaged in opposing what they considered the machinations of the Devil—they supposing that he was the cause, operating through the agency of Witches, of all the torture and misery they beheld, and

that, by their opposition, they were liable also to suffer from his malignancy. They believed, also, that the Devil was about to establish an agency, or kingdom in New England; and had actually commenced operations in Salem Village. This, Cotton Mather, Parris, and others, were determined should not be done, at least if they could help it. There was some very singular evidence given at the Courts on this point. Ann Foster, of Andover, a confessing Witch, testified at her examination, July 21, 1692, "that she was at a Witch meeting at the Village, where there was a large number of Witches present. and that the principal discourse at this gathering, was in regard to the setting up of the Devil's kingdom at the Village, and making it their rendezvous!" And another confessing Witch testified, at a subsequent meeting, that they had, by an unanimous vote, concluded to set up the Devil's kingdom at Salem Village—it being thought, all things considered, the most suitable place to begin the enterprise, and, by so doing, they were in hopes it would spread over New England. This was solemnly and religiously believed by many, and it required courage and pluck to stand up and resist the designs of a powerful, malicious being, capable, as they supposed, of tormenting them in various ways, destroying their cattle, &c.

Parris appears to have been very desirous of preventing his daughter, Elizabeth, from participating in the excitement at the Village. She was sent by her father, at the commencement of the Delusion, to reside at Salem with Capt. Stephen Sewall. While there, the Captain and his wife were much discouraged in effecting a cure, as she continued to have sore fits. Elizabeth said that the great *black man*, came to her, and told her, if she would be ruled by him, she should have whatsoever she desired, and go to a *Golden City*. She related this to Mrs. Sewall, who immediately told the child it was the Devil, and he was a liar, and bid her tell him so if he came to her again; which she did accordingly the next time the black man came to her. The Devil, it would seem, unaccustomed, in those days, to experience such resistance, and utterly astonished at the cool impudence of Betsey Parris, never troubled her afterwards; and,—although this girl was one of the first originators of the Witchcraft Delusion, in connection with her cousin Abigail Williams,—she appears to have had, afterwards, but little to do with Witchcraft. This arose in consequence of following the sage advice of Mrs. Sewall, in getting rid of the Devil; or, what was more probable, in her father taking her from the weekly circle of accusing and bewitching girls, and placing her in a very respectable family in Salem.

It has been said that Parris had a rival in Rev. George Burroughs, who had friends in Salem Village, desirous of his settlement; and that was a sufficient reason why Parris should appear at the Courts against him. We have never seen any proof of this rivalry between these clergymen. It is difficult now to ascertain the cause of the arrest of Burroughs who was preaching at Wells, at the time, in his pulpit. The girl who accused him of bewitching her, was Mercy Lewis, who was then living with Thomas Putnam. She formerly lived with Burroughs, when he preached at the Village; and, upon one or more occasions, he whipped her severely. This we suspect was the true cause of her crying out against Mr. Burroughs.

It had been said that Rebecca Nurse was an object of special hatred to Parris; but this we have failed to discover. We cannot imagine the cause of the alleged complaint of Witchcraft against Rebecca Nurse. She appears to have been an amiable and exemplary woman, and well educated for the times in which she lived. We suspect, from an examination of the charges brought against her at the Courts, that she had several times severely rebuked the accusing girls for their folly and wickedness, when meeting in their circles. In this way, she probably incurred the displeasure of Ann Putnam and her mother—her principal accusers. Mr. Parris has often been accused of being over officious, and a swift witness against the accused at the Courts. Parris could not be said to have been a chief witness in the prosecutions, although he may be said to have been a frequent corroborating witness with his neighbors. The chief witnesses were the accusing girls, as they were called. At the preliminary examinations before the magistrates, Parris and others were required to be present, when the depositions were taken down, as related by the girls, and afterwards made use of at the trials before the courts.

These being given in and related by children, and young persons, the Court required an endorsement from some older persons, who witnessed their supposed afflictions, and could attest to their depositions. It is in this way Mr. Parris's name, as well as his neighbors, frequently appear in the Court documents. Parris appears to have been frequently at the examinations of those accused of Witchcraft, and put questions to those on trial. He also acted as a recorder to the magistrates more frequently than others. The reason for his being often employed by the Courts was simply because he was requested to do so, and was discovered to be well qualified for that purpose. We have seen the records of several persons thus employed, and should say Parris's was the best. It was his practice to take down the ex-

aminations in short hand,—he being a good stenographer,—and then write them out in full, in a plain, legible hand.

We have not been able to discover the cause of the alleged complaint of witchcraft, against those three excellent women, viz: Rebecca Nurse, Mary Easty, and Sarah Cloyce. They were sisters, of a good education, and fair reputation. It is not to be denied, that the part Parris took in the trials of these women, was the chief cause of the opposition towards him, and led at last to his dismissal from the people at the village. His principal opposers were the relatives of these three unfortunate sisters. Samuel Nurse, a son of Rebecca Nurse, John Tarbell, who had married her daughter, and Peter Cloyce, who had married Sarah Cloyce. These three persons, together with one Thomas Williams, after the execution of Rebecca Nurse and Mary Easty, and the imprisonment of Sarah Cloyce, became much dissatisfied with Parris, and sought advice of the Elders in some of the neighboring churches, as to the best mode of bringing him before a council to answer for his conduct in the Witchcraft delusion. They were members of the Village church, and had for some time neglected public worship on the sabbath, and absented themselves from the communion. While these discontented brethren were considering what course to pursue against their pastor, Parris, either in order to divert their proceedings from himself, or to administer discipline, on the 14th of August, 1692, caused the church to be stayed, and entered a complaint against Samuel Nurse and wife, John Tarbell and wife, and Peter Cloyce, for absenting themselves from the communion. This complaint was entertained by the church, and brother Nathaniel Putnam, and the two deacons were chosen to be joined with the pastor to discourse with the absentees. Much time was spent by this committee, in endeavoring to obtain satisfaction from the offending brethren;—while on the other hand, they were striving by all the means in their power, to bring Parris before a council. At last, on the 16th of February, 1693, at a meeting of the committee of the church, the dissenting brethren gave their reasons for withdrawing from the communion.

“Whereas we, Thomas Williams, and John Tarbell, and Samuel Nurse, having a long time gone under the burden of great grievances, by reason of some unwarrantable actings of Mr. Parris, as we esteem them, and were proceeding in an orderly way, to obtain satisfaction from him, and had taken some steps thereunto, according to the advice of some neighboring elders. But obstructive to our proceedings therein, Mr. Parris and some brethren of the church, were appointed by the church, to de-

mand a reason of us, of our withdrawing from communion. The regularity of which proceeding, we do not understand, because in this case, we esteem ourselves to be plaintiffs and parties offended, and in an orderly way, seeking satisfaction, tho' hitherto denied. Our answer to the church is, that we esteem ourselves hereby prevented in our duty, which we account a grievance, seeing we were first in prosecution of the rule of our Lord Jesus Christ, laid down in Mathew 18 C., 15, 16 vs. Wherefore, if the church give us the liberty and freedom of attending our duty, as according to rule bound, possibly then further trouble may be prevented, or otherwise, the case will necessarily and regularly come before them. But if they deny us the request, we shall, as in duty bound, give the reasons of our proceedings to the church, or any others, when orderly demanded."

Parris says, in the records of the church, "that these displeased brethren were told in reply to their communication, that they did ill to reflect on the church, who, as also the Pastor, were ignorant of their methods, and that they should have spoken with the pastor himself, before they went to consult neighboring Elders. But to this last they pleaded ignorance. So we gave way to their request of proceeding orderly."

On the 27th of March, 1698, the dissenting brethren handed to the pastor the following document:—

"To our Pastor and Minister, Mr. Samuel Parris, of Salem Village, and to some others of the Plantation. We, whose names are underwritten, being deeply sensible, that those uncomfortable differences that are amongst us, are very dishonorable to God, and a scandal to religion, and very uncomfortable to ourselves, and an ill example to those, who may come after us. And by our maintaining and upholding differences, that are amongst us, we do but gratify the Devil, the great adversary to our souls. For the removal of which we have thought meet to proffer our present thoughts to your serious consideration, hoping, that there may be such methods propounded, as may be for the settling and confirming peace and unity amongst us, both at the present and for the future. And our desires are, that such a foundation may be laid for peace and truth, that the gates of hell may not prevail against it. And in order thereunto, Solomon adviseth counsel; and our desires are, that a council of elders may be chosen, to hear all our grievances between Mr. Parris and us, and determine where the blameable cause is. And we hope, that their wisdom and prudence may direct us to such a method, as may be for our comfort for both present and future."

Much time was spent by the committee of the church, in endeavoring to obtain satisfaction from the dissenting brethren.

ren, while the latter were striving by all the means in their power, to bring Parris before a council. At last, on the 16th of February, 1693, at a meeting of the committee, the dissenting brethren gave their reasons for withdrawing from the ministry at the village. They are the following:—

“1st, The distracting and disturbing tumults and noises, made by persons under diabolical power and delusions, preventing sometimes our hearing, understanding, and profiting by the word preached.

2d, The apprehensions of danger of ourselves being accused as the devil's instruments to molest and afflict the persons complaining, we, seeing those whom we had reason to esteem better than ourselves, thus accused, blemished, and of their lives bereaved. Foreseeing this, we thought it our prudence to withdraw.

3d, We found so frequent and positive preaching up some principles and practices by Mr. Parris, referring to the dark and dismal miseries of iniquity, working amongst us, was not profitable but offensive.

4th, Neither could we, in conscience join with Mr. Parris in the requests, which he made in prayer, referring to the trouble then among us, and upon us, therefore thought it our most safe and peaceable way to withdraw. The reasons why we hold not communion with them at the Lord's table are, because we esteem ourselves justly aggrieved and offended with the officer, who does administer, for the reasons following:—

1st, From his declared and published principles, referring to our molestations from the invisible world, differing from the opinion of the generality of the Orthodox Ministers of this whole country.

2d, His easy and strong faith and belief of the affirmations and accusations made by those, they call the afflicted.

3d, His laying aside that grace, which above all we are required to put on, viz: charity towards his neighbors, and especially towards those of his church, when there is no apparent reason for the contrary.

4th, His approving and practising unwarrantable and ungrounded methods, for discovering what he was desirous to know, referring to the bewitched or possessed persons, as in bringing some to others, and by and from them pretending to inform himself and others, who were the devil's instruments to afflict the sick and pained.

5th, His unsafe and unaccountable oath, given by him against sundry of the accused.



6th, His not sending to the world so fair (if so true,) account of what he wrote on examination of the afflicted.

7th, Sundry unsafe, if sound, points of doctrine, delivered in his preaching, which we esteem not warrantable (if christian).

8th, His persisting in these principles, and justifying his practices, not rendering any satisfaction to us, when regularly desired, but rather further offending and dissatisfying ourselves.

JOHN TARBELL, }  
THOS. WILKINS, }  
SAM'L. NURSE." }

After the Pastor had read the charges against him, he brought forward his "Meditations for Peace." This paper, having been considered at the time as an acknowledgement of his mistakes in the witchcraft delusion, we have given it entire. It is as follows :—

"For as much as it is the undoubted duty of all christians to pursue peace, Psal. XXX IV. 14th, even to a reaching of it, if it be possible ; (Amos XII-18-19) and whereas, through the righteous sovereign and awful providence of God, the grand enemy to all christian peace, has been of late tremendously let loose in divers places hereabout, and more especially among our sinful selves, not only to interrupt that partial peace, which we sometimes enjoyed, but also, through his wiles and temptations, and our weakness and corruptions, to make wider breaches, and raise more bitter animosities between too many of us ; in which dark and difficult dispensations, we have been all, or most of us, of one mind for a time, and afterwards of differing apprehensions ; and at last we are but in the dark, upon serious thoughts of all ; and after many prayers, I have been moved to present to you (my beloved flock) the following particulars, in way of contri-  
bution toward a regaining of christian concord, if so be, we be not altogether unappeasable, irreconcilable, and so destitute of that good spirit, which is first pure. then peaceable, gentle, and easy to be entreated, James iii. 17th, viz :—

1st, In that the Lord ordered the late horrid calamity (which afterward plague-like spread in many other places) to break out first in my family, I cannot but look upon as a very sore rebuke, and humbling providence, both to myself and mine, and desire so we may improve it.

2d, In that also in my family, were some of both parties, viz : accusers and accused, I look also upon as an aggravation of that rebuke, as an addition of wormwood to the gall.

3d, In the means, which were used in my family, though totally unknown to me or mine (except servants) till afterwards,

to raise spirits and apparitions in no better than a diabolical way, I do also look upon as a further rebuke of Divine Providence, and by all, I do humbly own this day, before the Lord and his people, that God has been righteously spitting in my face, Numbers xii. 14th,—and I desire to lie low under all this reproach, and to lay my hand on my mouth.

4th, As to the management of these mysteries, as far as concerns myself, I am very desirous upon further light, to own any errors, I have therein fallen into, and can come to a discerning of; in the mean time I do acknowledge, upon after considerations, that were the same trouble again, (which the Lord of his rich mercy forever prevent,) I should not agree with my former apprehensions, in all points—as for instance :

1st, I question not but God sometimes suffers the devil, as of late, to afflict in shape of not only innocence, but pious persons; or so to delude the senses of the afflicted persons; that they strongly conceit their heart is from such persons, when indeed it is not.

2d, The improving of one afflicted, to inquire by who afflicts the other, I fear may be, and has been, unlawfully used to Satan's great advantage.

3d, As to my writing, it was put upon me by authority, and therein I have been very careful to avoid the wronging of any.

4th, As to my oath, I never meant it, nor do I know how it can be otherwise construed, than as vulgarly, and every one understood, yea, and upon inquiry it may be found so worded also.

5th, As to any passage in preaching, or praying, in the sore hour of distress and darkness, I always intended but due justice on each hand, and that not according to men, but God, who knows all things most perfectly; however, through weakness or sore exercise, I might sometimes, yea, and possibly sundry times, unadvisedly express myself.

6th, As to several that have confessed against themselves, they being wholly strangers to me, but yet of good account, with better men than myself, to whom also they are well known, I do not pass so much as a secret condemnation upon them; but rather, seeing God had so amazingly lengthened out Satan's chain, in this most formidable outrage, I much more incline to side with the opinion, of those that have grounds to hope better of them.

7th, As to all that have unduly suffered in these matters, either in their persons or relations, through the clouds of human weakness, and Satan's wiles and sophistry, I do truly sympathize with them; taking it for granted, that such as know themselves clear of this transgression, or that have sufficient grounds so to look upon their dear friends, have hereby been

under those sore trials and temptations, that not an ordinary measure of true grace would be sufficient, to prevent a bewraying of remaining corruption.

8th, I am very much in the mind, and abundantly perswaded, that God, for holy ends, though for what in particular is best known to himself, has suffered the evil angels to delude us on both hands; but how far on the one side, or the other, is much above me to say; and if we cannot reconcile till we come to a full discerning of those things, I fear we shall never come to an agreement, or soonest not in this world.

9th, Therefore, in fine, the matter being so dark and perplexed, as that there is no present appearance, that all God's servants should be altogether of one mind in all circumstances, touching the same, I do most heartily, fervently and humbly beseech pardon of the merciful God, through the blood of Christ, for all my mistakes and trespasses in so weighty a matter; and also all your forgiveness of every offence, in this or other affairs, wherein you see or conceive that I have erred and offended, professing, in the presence of the Almighty God, that what I have done has been, as for substance, as I apprehended was duty, however through weakness, ignorance, &c., I may have been mistaken. I also, through grace, promising each of you the like of me, so again I beg, entreat and beseech you, that Satan the devil, the roaring lion, the old dragon, the enemy of all righteousness, may no longer be served by us, by our envy and strifes; where every evil work prevails, whilst these bear sway James iii. (14, 15; 16,) but that all from this day forward, may be covered with the mantle of love, and we may on all hands forgive each other heartily, sincerely and thoroughly, as we do hope and pray that God for Christ's sake would forgive each of ourselves, (Matt—xviii. 21 to the end,) Coloss. iii. 12. 13. Put on therefore (as the elect of God, holy and beloved,) bowels of mercies, kindness, humbleness of mind, meekness, long-suffering; forbearing one another, and forgiving one another, if any man have a quarrel against any; even as Christ forgave you, so also do ye—Eph. iv. 31. 32. Let all bitterness, and anger, and clamour, and evil-speaking, be put away from you, with all malice,—and be ye kind one to another, tender-hearted, forgiving one another, even as God for Christ's sake hath forgiven you. Amen—Amen.

SAMUEL PARRIS.

Given to the dissenting brethren, for their consideration, at their request.

*November, 26th, 1694."*

Notwithstanding the discontented brethren continued to press the acceptance of their petition, for a mutual council. Parris refused to notice it, and says, "I put it up in my pocket, and told them I would consider it." It appears, by the records, that the acknowledgment of Mr. Parris was first read before the church, November, 18, 1694, in the presence of the dissenting brethren, when Tarbell remarked, that if the pastor had formerly made but *half the acknowledgment he now had*, it had never come to this. It would seem that the acknowledgment of the pastor was not satisfactory to the brethren, and they continued to persist in the calling of a council. In the meantime, Parris brought sundry objections, as he called them, against Tarbell and his friends, which were read before the church, November 18th. These objections, were as follows:—"Their precipitant, schismatical and total withdrawing from the church; Their bringing forward a factious libel to the pastor, consisting of calumnies, or reflections on said minister, and others of the plantation; their impetuous pursuit of the minister at his house, for answer to said libel to his great disquietude; there restless pursuit of the minister, on the 14th of April, 1693, for an answer to said libel; their persisting with great heat, that their charge might be read, yea loudly and fiercely before the whole brotherhood, clammouring against the church, and their publishing under their own hands, in divers places of the country, sundry obsequies against the church; their ensnaring several to join them in a petition to his Excellency and General Court, scandalizing the church and minister, as unpeaceable with their neighbors; their withdrawing their purses, as well as their persons from upholding the Lord's table, and the ministry; their gross mistake in their letter to the church at Malden, wherein they profess so much dissatisfaction with the doctrine, practice and administration of their pastor, for above a year, before the date of said letter, as that they were forced to withdraw from all public worship; whereas it is most notorious, that they were not wanting as to a profession of much respect to their pastor, all along before, yea, and a considerable while after the breaking out of the late horrid witchcraft." These are some of the charges brought against the three brethren by Parris, and he informs us, "as soon as the public reading of these articles was ended, Brother Thomas Wilkins, in a scoffing and contemptuous way, said openly, 'this is a large epistle.'" It would seem by the records, that the dissenting brethren continued to make strenuous efforts to bring Parris before a council, which was at last recommended by the pastors of the churches in the neighborhood, when Parris in his last attempt to

evade it, proposed to give the discontented brethren, a dismission to some other orthodox church, to which Tarbell replied, "Aye, if we could find a way to remove our living too." After a delay of more than two years, the church consented to call a council, who met at the village, April 3d, 1695. Dr. Increase Mather was chosen moderator, and offered the following report, which was accepted by the council, and presented to the church:—1st, They unanimously declared that "we judge that altho' in the late and dark time of the confusions, wherein Satan had obtained a more than ordinary liberty to sift this plantation, there were sundry unwarrantable and uncomfortable steps, taken by Mr. Samuel Parris, the pastor of the church in Salem Village, then under the hurrying distractions of amazing afflictions; yet the said Mr. Parris, by the good hand of God, brought unto a better sense of things, hath so fully expressed it, that a christian charity may, and should, receive satisfaction therewith. 2d, They advised the dissenting brethren to accept the satisfaction, which he had tendered in his christian acknowledgment of the errors therein committed, and in case Mr. Parris finds after all, that he cannot with any comfort and service, continue in his present station, his removal from thence, will not expose him to any hard character with us. Having observed that there is, in Salem Village, a spirit full of contention and animosity, too sadly verifying the blemish, which hath heretofore lain upon them; and that some complaints against Mr. Parris have been either causeless or groundless, or unduly aggravated, we do, in the name and fear of the Lord, solemnly warn them to consider whether, if they continue to devoure one another, it will not be bitterness in the latter end."

The recommendation of the council appears to have been satisfactory to the friends of Mr. Parris and the pastor was resolved to continue in the ministry. At the same time, the report of the council was unsatisfactory to those persons opposed to Mr. Parris, as it did not recommend his dismission; accordingly, on the 3d day of May, 1695, a paper, signed by 16 young men, 52 householders and 18 church members, was handed to the Rev. Elders, composing the late council at the village, requesting them to give Parris's case a rehearing, and more plainly advise the pastor to cease his labors, and seek to dispose himself elsewhere, &c. On the 6th of May, 1695, in answer to the opponents of Mr. Parris, the council sent a letter to the pastor, informing him of the extent of the opposition to his ministry, and advising him to come away from his present station, and unite in calling another minister, and forgiving and forgetting all former grievances.

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Mr. Parris appears to have been nettled with the last recommendation of the council for him to leave his parish, and says, in the church records, under his own hand, that the paper (in answer to the instrument and *classical* letter from Cambridge) was brought by Deacon Putnam to the Elders, assembled at Boston, at Mr. Willard's, May 29th, 1695, being the day of Election after dinner, when was assembled the body of Elders, belonging to this Province. This paper was addressed to the Rev. Mr. Increase Mather and others of the Rev Elders, which lately met at Cambridge, under date of May 20th, 1695, and signed by 53 householders and 52 church members, all belonging to Salem Village. In this letter, they say, that the removing of Mr. Parris from his present station will not unite us, in calling another minister. That they justly fear, should he be removed, they would be left, as a sheep without a shepherd. Therefore they desire, that Mr. Parris may continue in his present station.

The council appear to have been at last fully satisfied that Mr. Parris should leave Salem Village, and they therefore procured a parish for him in Suffield, and sent two messengers from that church, to persuade the church at Salem Village to dismiss their pastor. Parris informs us, in his church records, that at a meeting of the church, held at his house, June 3d, 1695, he acquainted the brethren, that here were two messengers from Suffield, who were looking out for a minister, and by the desire of some elders in Boston, made application to him, and was willing to go with them, if the brethren pleased, and in his absence for a few months, they might try if they could (with others, who now dissented,) unite in some other minister. But, after several hours debate, both with the brethren, and some other christian neighbors, they all declared an averseness to his motion. Thereupon thanking them for their professed love to him, he told them, he was not free to go, without their consent, and seeing they would not let him go, he prayed for them to *keep him, and make much of him*. The same day, June 3d, 1695, the church sent the following decisive letter to Rev. Increase and Cotton Mather, saying, "we cannot fault ye intendment of our brethren Sergeant David Winchell, and Corporal Victory Sikes, messengers from Suffield, sent by yourselves to obtain the ministry of our Pastor if we were so minded, as to part with him. But upon maturing together, this day both of church and others, to consult that affair, do hereby signify at the desire of the above Suffield messengers, with unanimous agreement, not one excepted—(save the four known dissenters) we are resolved—*God helping against such a separation during our abili-*

*ty to prevent it.* And our Pastor tho' otherwise inclined, yet as unwilling to leave so many of his flock, as testify so strong affections towards him. So earnestly requesting the constant helps of your prayers, and as much otherwise as you can, we rest, worthy and much esteemed sirs, your needy brethren.

SAMUEL PARRIS, Pastor,

in the name of the church and other christian neighbors.

To the Rev. Mr. Increase Mather and }

Mr. Cotton Mather, jun., Boston. }

It does not appear that there were any more efforts made by the Boston Elders, to bring about a reconciliation ; and it seems that there was always a majority of the parish in favor of Mr. Parris, remaining with them ; and there appears to have been a very general mistake, with many authors, in regard to his dismissal from his people, they, supposing that he was hastily driven away from the Village. Whereas he continued and maintained himself through a ministerial quarrel of five years, until he saw fit to discontinue it, when he informed his church of his intentions.

There were three distinct matters of dispute between Parris and his people at Salem Village. The first arose previous to the breaking out of the witchcraft delusion, in consequence of the neglect of his Parish to furnish him with the stipulated supply of 30 cords of wood per annum. The second dispute with the four dissenting brethren of the church, arose in consequence of the course pursued by Parris in regard to witchcraft. The third, was in consequence of his claiming the parsonage and lands, under a vote of the inhabitants of the Village, and their refusing to pay him his arrears due him, on his old lists of rates. These three disputes, caused a long and continued quarrel, which at last attracted the people far and near—was a grave matter for learned councils, was brought before the County Courts, and was a subject for petition before the great and General Court at Boston. After it was understood that Parris was to leave the people at the Village, and that he claimed the parsonage, a fierce quarrel arose between him and the inhabitants, which was carried before the Court at Ipswich.

The matter, without being settled, was taken from the Courts, and given to Wait Winthrop, Elisha Cook, and Samuel Sewall, Esqrs., and they decided "that Mr. Parris should have some of his arrears paid him, also a sum of money for his repairs of the ministerial house, and be dismissed from Salem Village."

It was during his greatest difficulties with his people, that he lost his wife, by death. This occurred on the 14th of July, 1696. She was buried in the Wadsworth burial ground, in

Danvers, where can be seen a grey slate stone,—a fine specimen of the lapidary art,—with its lines as sharp as on the day when they were first cut, erected over her grave, on which is the following inscription, with the initials of Samuel Parris at the bottom :—

“ Sleep precious Dust no stranger now to Rest,  
Thou hast thy longed wish, within Abraham’s Brest—  
Farwell Best Wife, Choice Mother, Neighbor, Friend,  
We’ll wait the less, for hopes of the in the end.”      S. P.

After his dismissal from Salem Village he removed to Concord, Massachusetts, where he lived in 1705; and 1711, preached six months in Dunstable. He died at Sudbury, February 27th, 1720; Mrs. Dorothy Parris, his second wife, died there on the 6th of September, 1719. The following are the children of Mr. Parris :—Elizabeth, who was married to Benj. Barnes, at Concord, January 13th, 1710; Dorothy, married Hopestill Brown, of Sudbury, 1718, and died March 4th, 1725; Samuel, who was a Deacon of a Church in Sudbury, died November 22d, 1792, aged 91 years; Noyes, graduated at Harvard College, 1721, was deranged, and supported by the town; Mary, married Peter Bent, of Sudbury, April 18th, 1727.

Hon. C. W. UPHAM, in some very felicitous remarks, followed Mr. F. He expressed himself highly gratified with the hour’s entertainment. He confessed himself in previous doubt as to the extent of the part Rev. Mr. Parris took in the Witch-delusion. He was glad therefore to find that the favorable view presented this evening could be substantiated through the Church Records made at the very time. It was a topic of importance to him, as he had lectured and written on the same subject several years since. Many of the minuter matters had been forgotten, but were now revived by Mr. F. He thought that conclusions at once pleasing and satisfactory could be drawn and on which great reliance might be placed. He moved that the thanks of the Institute be presented to Mr. Fowler for his very interesting and instructive sketch, and they were unanimously voted.

A brief discussion then ensued, suggested by some enquiries raised by John L. Russell, relative to the facts in the phenomena of so called Witchcraft, and how similar they might have



been to what is styled "one of the phases of spiritualism," of the present day? Whether many of the peculiarities, which seemed so mysterious as to induce learned and religious persons "to obtain books upon the subject of Witchcraft for the purpose of informing" themselves, could not be traced to certain abnormal conditions of the system, to physical causes; and that disturbances of the body might not produce disturbance of the mind, and that the regimen of the physician would not have proved more sanitary than that of a council of divines? This discussion was participated in, by Messrs. Fowler, Phippen, Upham, and others, each adding some interesting item. Mr. Upham remarked that he had little doubt that in the early development of the mysterious proceedings, which had formed the subject of the evening's entertainment, *dreams*, and especially that kind known as *night-mare*, had entered largely as the chief basis on which much of the extraordinary testimony of the witches rested, as, the riding through the air to a witch meeting on a broomstick, and the like. Taking these deductions as correct, we can easily gather, why little children bore so conspicuous a part in the legal investigations of the matter, being used frequently as witnesses.

A communication in the form of a letter and circular, from C. B. Richardson, of Boston, respecting the establishment of an historical journal, was referred to a committee, consisting of Messrs. Geo. D. Phippen, H. M. Brooks, and John H. Stone.

*Friday, November 28, 1856.*

Evening meeting at 7 o'clock. Rev. John L. Russell, Vice President, in the chair.

Records of preceding meeting, were read. Letters from Charles Lowe, C. Benjamin Richardson of Boston, and Joseph Scattergood of Philadelphia; also, donations to the library, from H. M. Brooks, D. A. White, O. C. Marsh, Israel P. Ward, George B. Loring, Caleb Foote, and from the Friends' bookstore, in Philadelphia, by Joseph Scattergood, agent, were

announced. This last named donation consisted of forty-five volumes and several pamphlets, thus making a very valuable addition to the Institute's library, and as representing the leading opinions and literature of that religious denomination.

George D. Phippen, as chairman of a committee, on a letter received from C. B. Richardson, relative to the establishment of a magazine, which should be the organ of all the Historical Societies of the United States of America, submitted the following Report, viz :—

The Committee to whom was referred the letter of C. B. Richardson, Esq., proposing the publication of an Historical Monthly Journal, to be the organ of the Historical Societies in all parts of the United States, and to consist of brief reports of the doings of the several Societies, notes, queries and other Historical matter, said proposition originating with the New England Historic Genealogical Society, respectfully Report.

That in their opinion such a publication, while confined within the proposed plan, would be a work of great importance to all interested in such pursuits, as a key to their investigations, and they recommend the Institute and its members to a share in its support, while it shall remain unconflicting with local Historical publications already established.

GEO. D. PHIPPEN,  
HENRY M. BROOKS,  
JOHN H. STONE.

John L. Russell presented, in the name of Prof. William B. Rogers, specimens of infusorial earth, from the Rappahanock river, in Virginia ; also, of fossils from the middle secondary formation in Pennsylvania, (*Cyprides*) ; also, others from the same formation in Virginia. Mr. R. introduced his subjects by the early history of the infusorial earths first known under Prof. Hitchcock's name of *hydrate of silica*. He said that the late Thomas Cole, used to procure this substance from the meadows in Northfields, near this city, and afterward from peat meadows in other parts of Massachusetts. It then was presented to them, under the term and name of *dead peat*, being found beneath the black and real peat, and lying immediately upon the clay or gravel at the bottom of the peat ditches. Some of the richest lumps or masses were taken from the peat ditches

of Danvers, on the farm of Dr. A. Nichols, and of others near by. When exposed to the air, these masses at first pasty, became dry and of a grey color, burned slowly with no flame and little smoke, and when the vegetable matter had been consumed, the ash-residue was found to be a congeries of exquisitely beautiful forms made of pure silica. At one time the substance was called *marl* but the application of a little acid soon dissipated that delusion, there being no effervescence to indicate the carbonate of lime, on the presence of which in marl, much of its fertilizing properties depend.

The microscopes, then employed by Messrs. Cole, and Russell, though bringing out the beauty of these minute forms, yet were inadequate to develop all their elegance and character. Since that time improvements in the microscope have induced many observers to attend to the examination of these tiny forms of organized bodies; and not only have vast beds of these deposits been found under peat bogs, but on the bottom of ponds, where the substance is of a chalky whiteness and free from other vegetable materials, and also in deposits of geological series, indicating the previous action of marine growths at periods long distant, as well as at periods comparatively more recent and modern.

These forms of aggregated individual organisms, have been claimed by the zoologist and by the botanist as being both animal and vegetable. The importance of their existence, though thus minute, is seen in the part they play in formation of soil, masses of this silicious earth being found of many inches and even feet in depth, and extending over vast areas of country. Portions of the specimen, presented by Prof. Rogers, had been examined by the Institute's Microscopist, H. F. King, and found to be rich in many highly interesting and characteristic forms. The infusorial earths, Mr. R. suggested, were valuable additions to a collection of Natural History, and should be sought for and collected, if possible, abroad by our active and enterprising members, who visit other regions of the globe.

Geo. D. Phippen exhibited some twigs of a cherry tree in his garden, at Bridge street, of extraordinary length and vigor, being five or six feet long, which he said were instances of the

average size of a great many sprouting the past summer from a thrifty young tree, on which he had performed a severe and wide kind of girdling, in order to kill it ; the tree no longer being wanted except as a support for some kind of vine. What surprised him was the nature and character of the shoots, so strong, vigorous and apparently healthy, bearing well-developed leaves during the summer and making perfect buds for another spring. The wound made by him was near the root, was deeply cut into the wood beyond the sap-wood, and there was no possible connection by any chance slip of bark, so thoroughly had the work been done. Was it possible that there was any supply of nutriment through the wood of the trunk, and could it be ascertained to a certainty that mere capillary attraction through the hardened heart wood and its immediate surrounding layers within the range of the cut and wounded surface, were not capable of sustaining life and giving nutrition.

Many queries were raised, relative to the particular locality of the tree, how far a shaded position might favor it and the like. It was admitted that the specimen twigs were remarkable, and that circumstances seemed singular in the case.

Several persons participated in inquiries and remarks, among whom Robert Manning, whose experience in horticulture rendered his opinions of great value, remarked, that he had met with several such instances in his garden and nursery-grounds ; that however promising and mysterious the aspect of this case might be, the next season would find Mr. P.'s first wishes realized in the certain death of the tree.

The chair, in explanation of the facts presented to the meeting, adduced similar instances within his observation ; also the well known instance of living shoots with leaves and flowers upon the logs of wood (birch especially), lying upon our wharves, and brought to the city for fuel. These instances showed the effort of nature to preserve and sustain life, and indicated the vigor of latent sap in the bark and softer tissues of the plant, which, when unusually called upon, could produce what often are considered extraordinary results. The chair then went into a minute but short exposition of the nature and conditions of the living cellular tissue of vegetables, and showed how capil-

lary attraction in hardened and woody structures of plants was incapable of exhibiting the phenomena of life. This explanation was considered satisfactory and interesting.

The topic of the circulation of the sap suggested some thoughts to Mr. Sidney C. Bancroft, who desired the opportunity of their expression ; and connected with the same subject, the phenomenon of the succession of forests in the difference of species of trees on the same soil. The chair took these queries up in order, and explained them on the various theories formerly entertained, and by the one, which he considered the most correct, after which, on motion, the Institute adjourned.

*Friday, December 12, 1856.*

Evening meeting at half past seven o'clock. Rev. John L. Russell, Vice-President, in the chair.

Records of the preceding meeting read, and donations to the Library announced, from D. Roberts, H. M. Brooks, H. F. Shepard, R. A. McKenzie, and T. A. Neal.

R. H. Wheatland exhibited a *Syngnathus*, from the Bank of Quero, presented by Solomon Woodbury, of Beverly.

The chair presented, in the name of S. B. Buttrick, several plates and charts illustrating the culture of the silkworm, which, at his suggestion, were referred to the Curator of Entomology.

R. H. Wheatland, of the Committee on the Constitution of the Essex Institute previously appointed, submitted the following Report, proposing an amendment as follows :—

ART. II. The number of Curators be left blank ; which was accepted.

GILBERT L. STREETER occupied the greater portion of the evening's session by an historical sketch of the building of the Frigate ESSEX at Salem, (Mass.), and of her subsequent fate, of which the following is an abstract :—

The Essex Frigate was built in Salem during the summer of the year 1799, at a spot on Winter Island, on the Neck, a few hundred feet west of Fort Pickering. It is an interesting event in our local history, on account of the zeal and enthu-

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siasm with which the enterprise was carried forward by the merchants of our town, and its connection with the origin of our national navy, to which it was an important contribution.

A war with France at that time seemed imminent, and Congress, responding to the suggestions of President Adams, passed an act in June, 1798, authorizing the President to accept such vessels as might be built by the citizens for the national service, and to issue six per cent stock to indemnify the subscribers. Subscriptions were raised for this purpose in Newburyport, Boston, New York, Philadelphia, Baltimore, Norfolk, and other places. Even in the infant city of Cincinnati a sum was subscribed towards equipping a galley for the defence of the Mississippi river. Stock was subsequently issued under the act to the amount of \$711,700.

About the middle of July, 1798, citizens of Salem opened "a patriotic subscription," at "the Insurance office," for the purpose of "raising money for the use of the government to be applied to the building of vessels, or such other purposes as government may choose." The object of the fund thus stated, was general, not specific, yet the project was at once received with favor. Our wealthier and more spirited citizens entered their names upon the list. It was soon considered expedient to devote the moneys thus raised to the construction of a "stout Frigate," under the act of Congress, which we have mentioned. This special purpose being known, several of the subscribers came forward and doubled their original subscriptions, and declared their willingness to do more if necessary. Elias Hackett Derby and William Gray, jr. subscribed \$10,000 each. By October the amount had reached \$74,000. A paper has been preserved containing the names of the subscribers, with the amount offered by each, as follows :

William Gray, jr.	\$10,000	Samuel Gray	2000
Elias H. Derby	10,000	William Ward	500
William Orne	5000	Joshua Ward	750
John Norris	5000	Jonathan Neal	2000
John Jenks	1500	John Daland	100
Eben'r Beckford	2000	Joseph Newhall	100
Benja. Pickman	1000	Michael Webb	100
Stephen Webb	500	Edmund Gale	10
Benja. Pickman, jr.	1500	Benja. Webb, jr.	100
Joseph Peabody	1500	Richard Manning	1000
John Osgood	1000	Benja. Hodges	500
William Prescott	1000	John Becket	100
Ichabod Nichols	1000	James Gould	50
Benja. Carpenter	500	John Derby	1000
Jacob Ashton	1000	Edward Allen, jr.	500
James King	500	Page & Ropes	100

Thomas Perkins	\$500	Lane & Son, (in work)	100
John Murphy	500	Enos Briggs	50
Joseph Cabot	500	Eph'm Emerton	100
Edward Killen	100	Wm. Marston	250
Ezk'l H. Derby	1000	Edward S. Lang	100
Jona. Mason	50	Tho's Webb	200
Samuel Ropes jr.	50	Walter P. Bartlett	100
Samuel Brooks	50	Israel Dodge	500
Asa Pierce	50	Sam'l Very	100
Nathan Pierce	250	Brackley Rose	100
Upton & Porter	400	Asa Kilham	20
Buffum & Howard	450	A Lady, by J. Jenks	50
Joseph Osgood, jr.	25	Edmund Upton	300
Wm. Appleton	50	Benj. West, jr.	250
John Hathorne	200	Tho's Chipman	100
Isaac Osgood	500	Rich'd Manning, jr.	200
Elias H. Derby, jr.	400	David Patten	50
Jona. Lambert	40	E. & J Sanderson	200
Henry Osborn	50	John Treadwell	500
Joseph Hiller	300	John Barr	600
Benj. Goodhue	800	Wm. Luscomb	300
Nath'l Batchelder	50	Jona. Waldo	40
Daniel Jenks	500	Tho's Bancroft	100
Samuel Archer	100	Nath'l West	1500
Joseph Vincent	200	Sam'l McIntire	100
Joshua Richardson	500	Benj. Felt	100
Joseph Mosely	100	George Dodge	1000
Wait & Pierce	2000	Peter Lander	200
Thomas Saunders	500	Stephen Phillips	1000
Abel Lawrence	500	Rich'd Derby, jr.	1500
Hardy Ropes	200	Joseph Waters	415
Tho's C. Cushing	50	C. Crowninshield	500
E. A. Holyoke	800	John Pickering	200
Moses Townsend	100		
Timothy Wellman, jr.	100		
John Morong	50		
			<hr/> \$74,700

This liberal subscription by our merchants was made in a spirit of generosity and patriotism; for, although they were guaranteed six per cent. interest, yet the government was at that very time seeking loans at *eight* per cent. They could have realized two per cent. more had they loaned money to government instead of building the Frigate, and this was justly regarded as a sacrifice upon the altar of patriotism.

In the evening of October 25, 1798, a meeting of the subscribers was held at the Court House, when it was voted to build a frigate of 32 guns. Mr. Wm. Gray, jr., John Norris and Jacob Ashton, Esqrs., Capt. Benj. Hodges and Capt. Ichabod Nichols, were chosen a committee to carry the vote into effect. Mr. Wm. Gray, jr. was made chairman, and Benja. Pickman, Esq., treasurer. Capt. Joseph Waters, an experienced ship-master, was appointed by the committee as general

agent. Col. Hackett, from Portsmouth, prepared the model and superintended the construction. The practical work of building was given to Mr. Enos Briggs, an experienced naval architect, famed in our annals as the builder of fifty vessels in this place between 1790 and 1817.

The keel of the Frigate was not laid until the 13th of April of the following spring. During the winter our streets had been enlivened by the numerous sleds of the farmers employed in bringing in the timber required for the enterprize. The towns of Danvers, Topsfield, Andover, Boxford, and others, each furnished a share of the material. The federalists considered it as a patriotic duty to cut down the finest sticks of their wood lots to help build "the noble structure" which was "to chastise French Insolence and Piracy." The progress of the building of the ship was watched with great interest during the summer. She was finally completed and ready for launching on the 30th September.

Previous to the launch, the greatest interest was exhibited by the public in the approaching event. Hundreds of persons, men, women, and children, visited the Neck during the preceding week, to see the preparations, and inspect the vessel. When the day arrived, people flocked in crowds to Winter Island, to witness the launch, from the hills in the vicinity, and from the jutting rocks on the shore. The guns of the frigate were planted on an eminence, to speak aloud the joy of the occasion.

The launch was described by all who beheld it, as one of unusual beauty and success. "She went into the water with the most easy and graceful motion, amidst the acclamations of thousands of spectators." The battery on the hill thundered forth the federal salute, which was returned by an armed vessel in the harbor.\*

As the frigate sat upon the water, like a bird, she gave visible evidence of those qualities, which made her so famous afterward. She proved to be the fastest sailer in the navy, for some years, and was the pride of all concerned in her construction.

Her dimensions were as follows: Gun deck, 141 feet; length of keel, 118 feet; breadth of beam, 37 feet; depth of hold, 12 ft. 3 in.; height between gun and lower deck, 5 ft. 9 in.; waist, 6 ft.; height under quarter deck, 6 ft., 3 in. Her measurement was 850 21-95 of a ton, and she was built by contract at \$30 per ton.

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\* A painting of the launch was made by Mr. Corne, an Italian artist of some merit, formerly in this town, and was preserved for some years in the hall of the Historical Society.



There were but six larger ships in the navy, viz: the United States, Constitution, Philadelphia, Chesapeake, Congress, and Constellation. "The Essex," says Cooper, in his *Naval History*, "was the only ship in the navy that was properly rated as a thirty-two, having a main-deck battery of 26 twelves, though she was a large vessel of her class."

The rigging and equipping of the frigate, was executed in the same prompt and thorough manner which had marked her construction. The cordage was manufactured at the three ropewalks then in the place, each taking a third of the whole job. Capt. Jonathan Harraden, a distinguished private naval commander in the Revolution, made the rigging for the main-mast, at his factory, in Brown street. Joseph Vincent fitted out the foremast, and Thomas Briggs, the mizzen mast, at their factories, located near each other, at the foot of the common. As indicating the spirit of the enterprize, it is remembered that when the huge *cables* were completed, they were conveyed to the frigate with due formality. The workmen took them upon their shoulders, and headed by a drum and fife, marched in procession to the neck. Everything was done in the spirit which creates the pomp and circumstance of war.

The sails were made in the most careful manner, by Messrs. Buffum and Howard, from duck manufactured expressly for the purpose, at Mr. Daniel Rust's factory, in Broad street, where the high school house now stands. The cloth was of a superior quality, very nicely graduated in weight from the lower to the higher sails. It was noticed that the frigate never sailed so well afterward, as she did under this first suit of sails.

The cost of the Essex, with nearly twelve months provisions and stores on board, is stated as follows, in the handwriting of Capt. Waters, the agent in her construction:

*Abstract of Materials, wrought and unwrought, for building and equipment, on account of Essex Frigate.*

Constructor.....	\$921 54
Building, carpenters' bill.....	26,616 64
Iron work, blacksmith.....	8,371 94
Cordage.....	10,075 03
Painting and Plumbing.....	2,256 35
Carving.....	410 00
Duck for one complete suit of sails.....	3,731 74
Anchors.....	1,081 92
Copper bolts, &c.....	4,339 05
Sailmakers, for making sails.....	730 24
Hire of Tradesmen, &c.....	2,735 36
J. W.'s account of sundries, which includes } spars, bolts, blocks, &c. }	12,723 91
Commissions on \$73,993 72, at 2 per ct.....	1,479 87
Amount carried over.....	\$75,473 59

Amount brought over.....	\$75,473 59
[The foregoing is the cost of the Essex, with one complete suit of sails and copper fastened, but not coppered—the expense of putting on the copper included in the foregoing.]	
Amount of ordnance, military stores and } kettleage	\$31,992 76
Amount of ship's stores.....	12,709 19
"     of provisions.....	12,304 52
Slop clothing.....	3,867 79
Hospital stores.....	1,526 20
	<hr/>
Sundries, for extra suit of sails, spars, anchors, &c.....	62,401 46 16,812 72
Total Cost.....	<hr/> <u>\$154,687 77</u>

The following prices of labor and materials, are also mentioned in the above paper:—Common laborers, \$1; joiners, \$1.25; carpenters, \$1.50; cordage, \$12.25 to \$12.50 per cwt.; hemp, \$215 to \$220 per ton; duck, heavy, \$18 to \$20; do. light, \$10 to \$12; sailmaker, \$3 per bolt.

It was expected at one time that the command of the Essex would be taken by Capt. Richard Derby, but he did not arrive home from Europe in season. The command was also offered to Capt. Joseph Waters, the agent of the subscribers, (by the Secretary of the Navy, Benja. Stoddart,) but he declined it on account of domestic duties requiring his presence with his family. The appointment was then conferred upon Capt. Edward Preble, of Portland.

In November, 1799, a rendezvous was opened and a crew enlisted for the frigate. Capt. Waters made "uncommon exertions," of which "Capt. Preble spoke in the strongest terms," to prepare her speedily for sea. She was ready in a few weeks.

On Sunday morning, Dec. 22, she sailed from our harbor, with flowing sheets and a favoring gale, walking the waters like a thing of life. As she passed out she fired a salute, which was returned from Fort Pickering. Her chief officers were as follows:

Captain, Edward Preble, of Portland; 1st Lieutenant, R. P. Beale, of Castine, Me.; 2d Lieut., Mr. Hicks, of Rhode Island; 3d Lieut., George Gardner Lee, of Salem; Captain's Clerk, Samuel Curwen Ward, of Salem, father of George. A. Ward, of New-York, the historian; Gunner, Samuel Masury.

She went at first to Newport, where she joined the frigate Congress, and, Jan. 6, 1800, both vessels sailed for Batavia, to convoy home a fleet of merchantmen. When six days out, the Congress was dismasted, and the Essex proceeded alone. She was, on this voyage, the first American vessel-of-war to double the Cape of Good Hope and enter the Indian seas.

The builders of the *Essex* hoped she might be useful in chastising "French insolence and piracy;" but that destiny was not reserved for her. The difficulties with France were soon settled, and the prowess of the *Essex* remained for exhibition in the war against that country (England) with which her builders were (then) upon the best of terms!

Her first hostile service was rendered at the capture of the town of Derne, in Tripoli, April 27, 1805, when, under Capt. Barron, she headed the naval force, in conjunction with the land forces under Gen. Wm. Eaton and the *Ex-Bashaw*. This was during her second cruise, which was in the Mediterranean, from 1802 to 1805. There she was employed in protecting American commerce against the pirates of that sea, and was commanded, successively, by Capt. W. Bainbridge, Stephen Decatur, C. Stewart, George Cox, A. Campbell, and J. Barron. In 1810, she again went to Europe under Capt. John Smith; and in 1811, she composed one of Commodore Rodger's squadron on the coast.

When war with England was declared, in 1812, the *Essex* was one of the first vessels to sail from New York, under command of Capt. David Porter, of heroic memory. War was declared June 18, and the *Essex* sailed July 3. She repaired to the vicinity of Newfoundland, and in little over a month took nine prizes. One of these was the British national armed ship *Alert*, of 20 guns and 28 men, which was taken after a short and sharp action of only eight minutes. The *Essex* at this time carried 46 guns and 319 men. The *Alert* was the first armed vessel taken in the war—the engagement having occurred August 13, six days before the action between the *Constitution* and *Guerriere*. The other prizes taken by the *Essex* during this cruise were as follows:

- |   |                               |
|---|-------------------------------|
| July 11. Brig Transport, with 197 troops, cut out of a fleet of seven transports, convoyed by the <i>Nimrod</i> of 32 guns. | Aug. 2. Brig <i>Hero</i> .    |
| " 13. Brig <i>Lamprey</i> .   | " 2. Ship <i>Nancy</i> .      |
| " 26. " <i>Leander</i> .  | " 3. Brig <i>Brothers</i> .   |
|   | " 8. " <i>King George</i> .   |
|   | " 9. " <i>Mary</i> .          |
|   | " 13. H. M. S. <i>Alert</i> . |

On the 27th October, 1812, the *Essex*, still under Porter, sailed for the Pacific—and was the first national vessel to double Cape Horn, as she had before been the first to double the Cape of Good Hope. On his way Porter took three prizes, and subsequently, in the Pacific, captured thirteen English vessels, principally whalers, entirely destroying that branch of the enemy's commerce. His prize money amounted to

\$2,000,000. In 1813. Nov. 19, he took possession of Sir Henry Martin's Island, in the South Seas, named it Madison's Island, built a village of six houses, a bakery, a ropewalk, &c., and erected a fort of six guns.

The English government soon sent vessels in search of the Essex, and March 28, 1814, she was attacked in the neutral port of Valparaiso, while disabled, by a greatly superior force, consisting of the British ship *Phoebe* of 53 guns and 320 men, and the *Cherub*, of 28 guns and 180 men,—the Essex having but 46 guns and 255 men. After a bloody and desperate fight of two hours and a quarter, during which the Essex was defended with extraordinary courage, Capt. Porter was compelled to strike his flag and surrender to the enemy whom he had so much annoyed. But the defeat was virtually a triumph, so gallantly was the Essex defended against a greatly superior force, and under peculiar disadvantages.

During this final cruise of the Essex, as an American vessel, her captures were as follows :

1812.	1813.
Dec. 12. Brig Nockton.	May 28. W. Ship Greenwich.
" 29. Sch'r Elizabeth.	" 28. W. " Catharine.
1813.	" 28. W. " Rose.
Mar. 25. " Neregda.	" 28. W. " Hector.
" 29. W. Ship Barclay.	July 13. W. " Cherlton.
Apr. 29. W. " Montezuma.	" 13. W. " Seringapatam.
" 29. W. " Georgiana.	" 13. W. " New Zealander.
" 29. W. " Policy.	Sept. 13. W. " Sir Andrew
May 28. W. " Atlantic.	Hammond.

After the capture of the Essex, she remained in the English navy until the year 1837, when she was sold at auction with other condemned vessels then withdrawn from the service. Of her subsequent history we are not informed. It would be interesting to know what was her ultimate fate, but we have no means of ascertaining this point.

We have seen the Essex built by the patriotism of our townsmen as an aid to the national navy, in its earliest infancy, and have noticed that she was famous in several respects :—that she was the fastest sailer in the Navy for several years ; the first national vessel to double the Cape of Good Hope, and Cape Horn ; that she achieved the first naval victory in the war, and took the largest number of prizes of any vessel. These things certainly justify a considerable degree of local pride in her history.

David Roberts made some interesting and complimentary remarks, previous to his offering the following Vote :—"that

the thanks of the Institute be presented to Mr. Streeter, for the valuable paper read by him this evening."

George D. Phippen mentioned a few reminiscences, gleaned from his father, relative to this event, so conspicuous in the history of the times.

The vote offered by Mr. Roberts being unanimously adopted,

Charles W. Felt presented a communication, "On the direction which currents assume;" a topic suggested to him by noticing the flow of the tide through culverts under the Eastern Rail Road, near the Salem depot. He illustrated his subject by diagrams. After which the Institute adjourned.

Mr. Felt's attention, as he assured the meeting, was drawn to his subject in a morning's walk, when he noticed the direction of the eddies, which form at the entrance of the culverts. Some one, whose name he could not then recall, had asserted, that the current invariably assumes (when undisturbed) a certain direction. It was his intention to investigate the truth of this remark; but as circumstances seem to prevent a very near opportunity for study, he would throw the hint out, hoping others might resume the subject.

Although the water was not perfectly in an undisturbed state, yet what observations he was able to make seemed to him to confirm the assertion; and to show that in this case there was a tendency to flow from left to right, &c. &c. Mr. Felt remarked some deviation from this tendency in noticing the flow of the water under different culverts, which he thought might be accounted for, by the peculiar formation of the pond, of which some idea could be obtained by an inspection of the diagram, furnished him, through the kindness of Messrs. Emmerston and Foster, Architects and Engineers in this city.

Mr. Felt's paper and diagram were placed on file, for examination and study, at any future time, by any one interested in the subject matter of them.

*Friday, December 26, 1856.*

Evening meeting at half past seven o'clock. Rev. John L. Russell, Vice President, in the chair.

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Records of preceding meeting read. Several donations to the Library,—from G. F. Cheever, H. M. Brooks, C. L. Flint, secretary of Mass. Board of Agriculture, J. C. Holmes, sec'y of Mich. State Agri. Soc'y, and L. M. Boltwoon of Amherst, were duly announced;—also, to the Cabinets,—of which was a specimen of a skull of *Uria*, from Barrow's Island, South Pacific, by Henry Upton, accompanied by several implements of savage life among the same islands.

The chair presented a brief botanical account of the Clove (*Caryophyllus aromaticus*,) upon specimens presented to the Herbarium by Henry F. Shepard.

CHARLES M. ENDICOTT premised the offering of the following Resolution, by some valuable remarks, viz :

Before introducing to the consideration of the Society a certain Preamble and Resolution, touching the records of marriages, births and deaths of the several towns in this State, I propose to speak a few words upon the subject of New-England *genealogy*, that is, the *genealogy* of the first settlers, the puritan fathers of New-England, *as a duty*,—*a duty*, not so much we owe ourselves as a debt of gratitude due to the memories and characters of our puritan ancestors, and thereby rescue from total oblivion, among their posterity, the contemporaries of Winthrop, Dudley, Bradstreet, Conant, Palfrey, Balch, and others,—names already known to fame, and co-workers with them in the same cause, and partakers alike in all the privations and hardships incident to the settlement of a new country. "All things," says Master Wace, in his chronicles of the Norman Conquest, "hasten to decay; all fall; all perish; all come to an end. Man dieth, iron consumeth, wood decayeth; towns crumble, strong walls fall down, the war horse waxeth feeble—gay trappings grow old;—all the works of men's hands *perish*. Thus we are taught that all die, both clerk and lay; and short would be the fame of any after death, if their history did not endure by being written in the book of the clerk." But the objection may meet us here—what good will these investigations do? What will it profit a man to know about his ancestry? What have we, plain republicans, to do with armorial bearings and heraldic honors? What *good* will it do *us* to know that our ancestors were born within sight of Kenilworth Castle, or were baptized in York Minster? I would answer all these objections in the words of Edward Everett, to the

query "What good will the *Bunker Hill Monument* do?" "What good," says he, "does any thing do? What is *good*? Does *any thing* do any good? I should like to have the idea *good* explained and analyzed and run out to its original elements." If the contemplation of virtuous and heroic deeds, of generous and patriotic sentiments,—of the greatest sacrifices for principle, which the world ever beheld, ever did any good, ever purified the heart and stimulated mankind onward in the paths of honor, virtue, and uprightness, then the contemplation of the characters of our New England ancestors, to which such a pursuit will inevitably lead, *must* be conducive of the *greatest* good.

Genealogy, generally speaking, is to most persons a very unattractive as well as uninteresting pursuit, admitting of no lofty flights of fancy, and requiring no very powerful intellect to compass it. It certainly is no field for wide imaginative range, but is *hard dry matter of fact digging*,—and yet it requires a particular order of intellect not possessed by every one. A man may be a good statesman, a good jurist, a good political economist,—he may be a man of genius, a poet, a philosopher, and still be a *very poor* genealogist. Phrenologically speaking a *good* genealogist must have strongly developed the bumps of order, method, time, combined with great patience, perseverance and industry. Genealogy may be literally called "the pursuit of knowledge under difficulties,"—and in this money-making utilitarian age, one must not be disheartened if he detects a scornful curl of the lip, or an expression full of pity and compassion for the folly and weakness which prompts any one to enquire about his own or another's antecedents. Humbling indeed would it be to the pride of the present generation did they believe that in much less than a century hence, *their* descendants would be searching for *them* amid the dry bones of musty records, and almost obsolete and forgotten traditions. But still more would their bump of self esteem be depressed, if they thought their descendants in the same space of time, would not consider them of sufficient importance to be looked up *at all*,—but let me tell you this is the case with many of the families of the first settlers, the puritan stock, of New England.

I have spoken of the genealogy of our Puritan ancestors as a *duty* which we owe to *them*, and to make this claim upon us the more apparent, it will be proper to take a view of their characters, the times in which they lived, and the circumstances with which they were surrounded. Man, we are told, is the creature of circumstances. Now we do not intend to go

into any metaphysical disquisition how far circumstances *create* certain attributes of character, or how far they draw out and develope whatever otherwise would remain dormant there. If we could look into the private history of the N. E. settlers, or could have their characters faithfully photographed or daguerreotyped to us, we should find, whatever their station or social position, they possessed, almost without exception, strong characteristics and a marked individuality ;—for they lived in stirring times and moved amid stirring scenes. Examine the portraits of those, which have been transmitted to us,—analyze those pictured features,—look at the bold and sharp relief of the outlines of their figures—at the lineaments of their faces—observe the decision and determination of character expressed therein,—and you have mirrored before you not only, as a general thing, the men of that day, but an insight, as it were, into the very times which shaped those characters, and moulded those lineaments, and brought them into perfect harmony with the scenes and trials through which they had successively passed, both in this country and in England. A calm, resigned, placid and serene expression of countenance would not be thought consistent, or in keeping with the characters of any men, who had sacrificed so much, who had endured every thing, to establish themselves in a wilderness remote from the land of their birth, from the severities of the British hierarchy, and from “Star Chamber,” and “Courts of High Commission” authority and persecution. There is said to be a marked difference of expression in the human countenance of the present day, compared with that of former times. The present exhibits an anxious hurried expression, in strong contrast with the calm dignified composure which marked the portraits of the men of former days. This is supposed to be occasioned by the difference in the times. This is emphatically a fast age—every one is expected, as a matter of course, to be in a hurry. The introduction of railroads, steamboats and magnetic telegraphs are supposed to have contributed largely to this state of things, and the human countenances of the present generation has partaken of these times, in the same way as the countenances of our puritan ancestors no doubt partook of theirs.

Of the causes which moved our fathers to colonize New England, and the circumstances attending that great and important undertaking, it would seem almost needless at this late period to speak. The subject has already become familiar as household words, and nothing I can now say but has been already and better said. Both the reapers and the gleaners have



searched the field so thoroughly, that happy is the man who can now find a single straw to repay him for his labor—and yet the topic appears to demand, in this connection, a passing notice, if nothing more. It is well known, that at the beginning of the 17th century, one hundred and ten years after the discovery by Columbus, no other than the Spanish nation had established colonies in the New World; and that part of the American Continent, now known as New-England, had at that period only been occasionally visited by a few resolute and daring spirits, such as Cabot, Cortereal, Aubert, Verazzani, Cortez, and last, though not least, Sir Humphrey Gilbert, whom the love of adventure had drawn hither during the 16th century. It is true, supposed traces of the transitory visits of the Scandinavians, or hardy Northmen, previous to this period and even prior to the discovery by Columbus, have occasionally been met with, who glided like spectres along her shores, without effecting any permanent settlements, or leaving any durable mementoes behind them. It however requires more credulity, in the opinion of a recent writer, than a historian should possess, to recount the vague stories of the discoveries and positions of that people upon the shores of New England, all is so shrouded in theory and speculation. Down to this period the wave of civilization had not even reached her outermost borders, and the wild uncultivated Indian, almost entirely ignorant even of the existence of the nation of pale-faces, which was shortly to supersede him in the possession of this goodly heritage, roved at will over its wide expanse, his eye never resting on the village spire, or his ear saluted by the busy hum of industry. It was no earth-born passion that could induce men to forego the luxuries and refinements of civilized life, and plant themselves in an inhospitable wilderness, to struggle with hardships and difficulties which tasked so heavily all the powers of human endurance. Early in the 17th century a few resolute and God-fearing Puritans determined to sacrifice every thing, even life itself, rather than submit to worship God in any form which did not approve itself to their consciences. The germ of this sect had its rise about the middle of the 16th century, dating from the religious reformation commenced during the brief reign of Edward 6th. Emerging as the people of Great Britain did at that period “from” what Macaulay calls “the gorgeous and imperial superstition of Rome,” there were some who did not think the reformation then commenced so thorough and effective as the interests of pure religion required. Under Queen Elizabeth their reluctance to submit to the newly estab-

lished ecclesiastical tyranny of the Protestant Episcopal church, brought down upon their heads the most rigorous persecution; and which was followed up in the two succeeding reigns with such rancorous violence that it became evident to a few determined and resolute spirits in the north of England, that an adherence to their faith was incompatible with their longer residence in the land of their fathers. They therefore determined to abandon a country where they could reside no longer in safety, and seek a refuge in some foreign land. But, like Pharaoh of old, England was unwilling to part with the victims of her oppression and cruel persecutions. After several unsuccessful attempts, in which they were often betrayed, cast into prison, and heavily fined, they ultimately succeeded in evading the vigilance of the minions of the hierarchy, and embarking from England reached the shores of Holland in safety. Here they sojourned several years, meeting with many things both painful and repulsive to their feelings and principles, until at length they determined on the desperate step of casting their lot in the wilderness of America. With this view negotiations were opened with the Virginia Company, and measures were also taken to ascertain if the King would grant them liberty of conscience should they remove thither. They ultimately effected a satisfactory arrangement with the Company, but from James they could obtain nothing further than a promise, if they behaved peaceably he would not molest them on account of their religious opinions. After much detention, many mishaps and cruel disappointments, a portion of them, consisting of 41 individuals with their families, in all 101 persons, men, women and children, at length succeeded in bidding a final adieu to the shores of old England, on the 6th Sept'r, 1620, embarked on board the little ship Mayflower of 180 tons burthen, a vessel destined to immortality in the history of New England, and on the 9th of November following, weather beaten and tempest tost, they came in sight of the rocky and ice clad shores of this western continent, at a point remote from their place of destination, and presenting as desolate a scene as human eye probably ever rested upon. The time from this to 11th December was spent in exploring the coast in search of a convenient place to commence a settlement, when, at the latter date they cast anchor in the harbor and landed upon the Rock of PLYMOUTH.

At this period the only settlements in this part of the continent were at St. Augustine, Jamestown, and New Amsterdam. St. Augustine was peopled by Spaniards and Papists, New Amsterdam by Dutchmen, and the exiles had nothing to

hope from the colonists at Jamestown, who although their countrymen, bore them a hatred more intense than even foreigners. There was therefore nothing on the whole to regret in this deviation from their original plan, and whatever may have been the motives of man in accomplishing it, Providence had evidently designed it should result in their permanent advantage. Alone therefore, and without sympathy or human aid to assist them in their weary struggle for existence, they at once commenced the establishment of a self constituted government. Here this little colony nestled, conciliating the neighboring savages, and making almost superhuman efforts for its perpetuity, until at length, in 1624, its success was so favorably represented in the West of England, that the Rev. John White, a distinguished minister in Dorchester, prevailed upon some merchants and others to undertake another settlement in New-England. Having provided a common stock, they sent over several persons to begin a plantation at Cape Ann, where they were joined by some disaffected individuals from the Plymouth settlement. This project was soon abandoned as unprofitable, and a portion of the settlers removed westward within the territory of Naumkeag, which extended to, and included, within its limits, what is now Manchester. By the intercession and great exertions of Mr. White, the project of a settlement in this neighborhood was not altogether relinquished, and a new company was soon afterward formed, composed, like that of Plymouth, of the persecuted non-conformists of the Episcopal church.

Since the departure of the Plymouth Pilgrims, a new monarch sat upon the throne of England. But the Puritans gained nothing by the exchange. Charles inherited all his father's prejudices and animosity against this proscribed sect, and was troubled with no very nice scruples of conscience. According to Macaulay he "liked a Papist better than a Puritan." The court of *High Commission*, released by him from all control of the Parliament, and guided only by the will of the Primate, was enabled to fine, imprison, pillory, and mutilate without restraint. As a natural consequence of such unmitigated persecution, the tide of emigration towards the New-England colonies now set in so strong that it almost threatened to depopulate the mother country, and the King and Council, in their endeavors to arrest it, laid an embargo upon all vessels bound to New England. But true to the promptings of religious liberty, and despite the adverse gales of royal displeasure, our puritan ancestors continued to leave England and seek an asy-

lum from oppression on these western shores, bringing with them their household gods, their principles, their hopes.

The desire to know something of the history of our progenitors, under ordinary circumstances, would seem a dictate of nature, but from such sires New England's sons should be proud to trace out their descent. We are aware, it has become a favorite topic in these degenerate days to speak flippantly of our puritan ancestors and to show them up as bigots and fanatics, untouched by any of the finer feelings and sympathies of our nature,—stern, inflexible, and uncompromising, particularly towards those who differed from them in religious matters. The ablest pens and the ripest scholars have been employed in filling the world with malignant calumnies of their rude intolerance. Our puritan fathers were, it is true, rigid calvanists, and deep enthusiasts, and were not unfortunately, on the score of religious toleration, in advance of the age in which they lived, but were without one particle of what in their own time was considered fanaticism or bigotry. This has been altogether a more modern idea. We hold that by the impartial historian all men should be judged by the light of the age in which they lived, and the influences with which they were surrounded. Who of the present age will presume to say, had he lived in those times he should have been one whit wiser or more liberal, than our puritan ancestors? To such, if any there should be, I would address the language of Roger Clapp in 1676—"You have better food and raiment than was in former times; but have you better *hearts* than your forefathers had? If so, rejoice in that mercy, and let New England then shout for joy. Sure all the people of God in other parts of the world, that shall hear that the descendants of the first planters of New England have better hearts and are more heavenly than their predecessors, they will doubtless greatly rejoice, and will say, 'This is the generation whom the Lord hath blessed.' " Our puritan ancestors had sacrificed much, had endured every thing to establish a church after their own faith in this wilderness. Persecution was the prevailing evil of their time. The whole religious atmosphere they breathed was fraught with its baneful influence. Throughout christendom the principle of toleration had never been advanced but by the weaker party. The stronger had never acknowledged it; and if our fathers opposed those doctrines among the settlers in the infancy of the colony, which differed from their own, it probably arose from a fear of their ultimately gaining the ascendancy and subjecting the original settlers to a second persecution. The idea of compelling

a uniformity of religious belief our puritan fathers must have known was a solecism as chimerical as it is absurd.

Never in the entire annals of colonization is there an instance of sacrifice for principle to be compared with that which was made by many among those who founded the settlement of Massachusetts Bay. In these days of comfort and prosperity there is little to remind us of the struggle of that forlorn hope of humanity who first landed on these shores. We can have no realizing sense of it. From this very fact I fear their posterity, who are now reaping the fruits of their principles and sacrifices, are too apt to forget the debt of gratitude due to their exalted virtues. "In our beginning," says Roger Clapp, "many were in great straits for want of provision for themselves and their little ones—the then unsubdued wilderness yielding little food—oh the hunger that many suffered, and saw no hope, in the eye of reason, to be supplied, only by clams and muscles and fish. But bread was with many a very scarce thing, and flesh of all kinds as scarce. Sometimes I thought the very crusts of my father's table would have been very sweet to me. In those days God did cause his people to trust in him, and to be contented with mean things. It was not accounted a strange thing in those days to drink water, and to eat samp or hominy without butter or milk—and when I could get meal and water and salt boiled together, it was so good, who could wish better? If our provision be better now than it was then, let us not, and do you, dear children, take heed that you do not, forget the Lord our God." The experience of Roger Clapp was the experience of all others. With them the strifes of earth have passed away, and even their homes have crumbled,—but I trust their influence is still operating with us. Successive generations of their descendants have arisen and disappeared, and the objects familiar to their New England homes have entirely changed. The aborigines are no longer seen in our streets nor are they the tenants of our forests—and the very forests themselves which sheltered them have disappeared before the advance of civilization. It is the pride of England to trace its ancestry back to the Norman Conquest, to the vassal chiefs, who followed in the train of the conqueror. The "Roll of Battle-Abbey" has been carefully preserved, and consulted for family names, which bear some affinity to those of the present day. But New England sons trace *their origin* back to far more interesting Rolls than that of Battle-Abbey,—to the lists of passengers by the emigrant ships for New England,—and to far more noble conquests than the field

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of Hastings,—to the conquest, by their fathers, of principles over tyranny and oppression.

Let not therefore the sons of New England regard lightly the blood which flows in their veins, and the duties that blood impose to keep alive in every way possible the memories of their ancestors :—and in what way could they do it more effectually. in what better way can they bring themselves to a just realization. almost of their bodily presence. than by searching into their private histories, and following out their lineage. Although they may find

“ By no proud stone their narrow couch of rest is known,”

they will still find monuments of much greater value in the inflexible will, in the indomitable purpose, in the thrift, energy, and enterprise, in the unwavering trust in God which stamped their characters. Let us not therefore be unmindful that the toil and self denial, the almost superhuman efforts of our fathers, in subduing the wilderness and making it a suitable abode for subsequent generations, have the highest claims upon our gratitude, and should stifle every disposition to judge harshly of the austerity of their manners, or the rigidity of their principles.

In connexion I would now propose the following preamble and resolution :

That, *Whereas* there is a strong and decidedly increasing desire prevalent in this community, and throughout New England, to look into our early emigrant ancestry—And, *Whereas*, in the opinion of this Society the promotion of such an object is conducive of the greatest moral and practical good ; and that it is highly desirable that the personal history of all the early New England settlers, and the genealogies of their families, as far as practicable, should be accurately traced out—And, *Whereas*, this can only be done by consulting the records of the several towns and parishes throughout the State ; and great inconvenience is often experienced and expense incurred in travelling from town to town to inspect such records,—so much so that few can find time to devote to it, and many who cannot afford to incur the expense occasioned thereby, are thus discouraged from the undertaking,—*Therefore*, this Society deem it of the highest importance that some method should be devised whereby those Records can be concentrated, and thus made more easily accessible and available for the purposes of consultation. It is therefore *Resolved*, That this Society, whose design is the promotion of our local history, as well as an advancement of science, in order to aid the objects herein set

forth, petition the legislature of this State, at its ensuing session, for an appropriation to defray the expense of procuring copies of the Records of marriages, births, baptisms and deaths from the several towns and parishes throughout the State, from the earliest settlement down to the year 1850; and that the same be deposited in the office of the Secretary of the Commonwealth at Boston, to be open to the inspection of all persons in search of this particular kind of information.

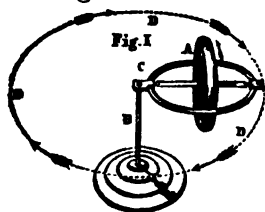
Dr. Henry Wheatland alluded to the difficulty, at present, experienced in many places, in obtaining access to the early town and parish records;—they are sometimes found in unsuitable places, liable to be destroyed by fire or other casualties—and offered the following :

*Voted*, That this Resolution be referred to a committee of five persons, with full power to act as in their opinion may be deemed advisable as to the most appropriate manner of presenting this subject to the consideration of the Legislature, and to invite the co-operation of the Historical Societies in the Commonwealth to aid the same.

Messrs. C. W. Upham, David Roberts, Wm. C. Endicott, Augustus Story and Henry M. Brooks, were appointed on this committee.

The remainder of the Evening's session was occupied by Moses G. Farmer, who exhibited some interesting experiments, with the Gyroscope, and explained its action.

The piece of apparatus, before us, this evening, is variously called, — The Gyroscope, — Rotascope, — or The Mechanical Paradox;—called by the latter name because its motions are in seeming contradiction with the law of gravitation.



The instrument consists of a wheel and axle (A) which runs upon pivots (B) supported by a ring. This ring has a projection, or ear, (C) in the direct line of the axle, and above the central plane of the ring; a small hole is countersunk on the under side of this ear to receive the point of the rod from the supporting stand. The instrument may, in fact, be considered as an amplification of the common spinning top—the motion of both being amenable to the same laws.

There have been numerous claimants for the honor of having invented this instrument, in one form or another. A very

elaborate one was contrived by Prof. Walter R. Johnson, of Philadelphia, and by him illustrated in the *Journal of Science*, in the year 1832. And the well known and similar apparatus of Bohnenberger, was described in scientific journals as far back as 1817. But since about the year 1851 the apparatus has received much attention and improvement from various physicists, as Foucault, Magnus, Wheatstone, and others in Europe; and in our own country, it has become a household toy; many thousands of them having been sold during the last year.

The principles upon which it operates have been thoroughly discussed in various works on Dynamics—among which, is the very lucid analytical investigations, contained in the fourth chapter of the second part of Poisson's *Treatise on Mechanics*.

The principles of the action of the common humming top were analytically discussed in the second number of the *Cambridge Miscellany*, a mathematical journal published July, 1842, at Cambridge, Mass.—edited by Professors Peirce and Lovering.

I will endeavor to elucidate the actions of the forces which sustain the motions of the instrument before us.

It is one of the fundamental laws of rotary motion, that if motions of rotation are impressed on a body, causing it to revolve at the same time around two different axes inclined to each other—the body will tend to revolve about an axis situated between the two, and inclined nearest to the direction of that axis about which exists, for the time being, the most rapid rotation. If, without impressing any rotation upon the wheel, I place the ear of the ring upon the point of the stand and abandon the apparatus to itself, it falls to the table as might have been expected. If now, on the contrary, I wind this string upon the axis of the wheel, and holding the ring firmly in one hand, with the other rapidly unrolling the string, a great velocity will be communicated to the wheel, and the force which I expended in pulling the string, is treasured up in the momentum of the wheel.

Let us now place the ear of the ring upon the central pivot and abandoning the system to itself await the results; instead of falling, as it did before, when the wheel is not rotating, it commences to revolve around the vertical pivot which



supports the whole system, apparently annulling the force of gravitation. But not in reality, for were the force of gravitation suspended there would be no rotation around the vertical axis, even could the wheel retain its inertia.

Let us examine a little farther. Suppose the support is between me and the ring, the axis of the wheel pointing from me, and the rotation of the wheel right handed,—if the farther end of the axis be depressed, or dropped, the particles of the wheel in the quadrant above the ring and to the left hand of the axis, will be displaced more than the particles in the right hand upper quadrant, if the axis drop in a vertical plane; but the system being free to move around the vertical axis will move a little to the left so that the displacements of all the particles shall be equal—this then commences the revolution about the vertical axis. If I could now fall on my right side, still looking at the instrument, it would appear to be falling from me—and this falling would tend to give it a motion to the left of its apparent position,—which would amount to the apparatus rising in a direction contrary to that in which it fell an instant since; and now, henceforth the outer end of the axis continues to rise and fall in a series of rapid and short undulations which last until its motion is destroyed. The outer end of the axis describes a succession of cycloidal curves. That this is the correct explanation may be proved by accelerating the motions around the vertical axis, when the ring will immediately rise; if, on the contrary, we retard the revolution of the ring it will fall and these different motions may be repeated at pleasure.

If the ring have a counterpoise which is heavier than the ring and wheel, the motion about the vertical axle will be in the contrary direction. If the ring be sustained in gimbals, as is usual with the mariner's compass, so that the axis of the wheel can take any given direction while the wheel is rotating, its axis will tend to remain parallel to itself.

Many other highly interesting experiments may be made with this apparatus, which each can perform at his pleasure.

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NOTE BY THE AUTHOR. A more full discussion of the principles of the Gyroscope, may be found in the July number of the *Amer. Jour. Sci.* by Maj. J. G. Barnard.  
*Salem, Aug. 6.*

After the conclusion of this singularly entertaining communication, and of experiments, a conversation ensued, participated in, by Messrs. H. J. Cross, Charles W. Felt, and others.

G. L. Streeter offered the following, which, being put, was unanimously carried :

*Voted*, That the thanks of the Essex Institute be tendered to Mr. Endicott, for the action he has proposed relative to the preservation of old records and the interesting remarks with which it has been introduced : and to Mr. Farmer, for his interesting exhibition of an instrument, which so apparently, as it were, sets at defiance the most familiar laws of Nature.

Adjourned.

*Friday, January 9, 1857.*

Evening meeting at half past seven o'clock. Rev. John L. Russell, Vice President, in the chair.

Records of last meeting read, also letters from Austin Bacon of Natick, James H. Dwight, William Beal of Murphy, N. C., Smithsonian Institution, American Antiquarian Society, I. J. Patch.

Donations to the *Library* were announced from American Academy of Arts and Science, American Antiquarian Society, Henry M. Brooks, Mrs. N. D. Cole, L. A. H. Latour of Montreal, C. E., Wm. Sutton.

The chair proceeded to announce, with suitable remarks, several donations to the *Historical* Department, from Mrs. N. D. Cole, Chas. W. Upham jr., and E. P. Sargent ;—among which were two Chinese paintings, emblematical of the popular religious creed of China. He explained the occurrence of the leaf and stem of the sacred lotos (*Nelumbium speciosum*) in the designs, and showed the object of its use as of a hieroglyphical character. These paintings were of the form of paper hangings, and one of them was richly painted in crimson and gold. They were, together with other articles from China, the gift of E. P. Sargent.

The chair also occupied the attention of the Institute with a rapid review of a scarce and curious book, loaned him for in-

spection by Mr. Henry M. Brooks. That portion of the work which related to the plants of New England engaged his chief attention. The title of the treatise is

"New England's Rarities Discovered in *Birds, Fishes, Serpents, and Plants* of that Country. Together with the Physical and Chyrurgical Remedies, wherewith the Natives constantly use to cure their Distempers, Wounds and Sores, &c. &c. By John Josselyn, Gent.; 2d Addition. London, 1675."

In attempting to identify the plants contained in the list observed by Josselyn, it is evident that considerable uncertainty will hang over several, whose old English names so similar to what we use now, yet designated widely different species.— Yet it may not be wholly without some historical interest if the attempt should be made. An approximation to identifying any of them, may throw some light on the subjects of introduction and acclimatization of kinds. Doubtless the similarity of the exact species with British, may have led the author into errors. . With these obstacles we proceed in the work of examining the early Botany of New England.

1. "OF SUCH PLANTS AS ARE COMMON WITH US IN ENGLAND."

Hedgehog Grass. Some species of *Carex*, which on account of its bristly heads or spikes is thus designated.

Mattweed. This is our salt-marsh grass *Spartina stricta*. "There be sorts of grasses," says Parkinson, "that serve to make mats and such other workes, which doe grow in wet and Moorish grounds near the Sea-side."

Catstail. *Typha Latifolia* or Reed Mace, common to both countries.

Stitchwort. Commonly taken here by the ignorant people for *eyebright*; it blows in June. The plant thus carefully denoted as distinct from *eyebright* is probably *Arenaria serpyllifolia*. The English species of *eyebright*, of the old herbals, seems to be some similar kind, called Eufrasia, and gramen leucanthemum. Dr. Cutler, in his "Account of Indigenous Vegetables botanically arranged," (see Mem: Am: Acad: of Arts and Sciences, Vol 1. 1785,) indicates "*Eye-bright* with blue blossoms amongst low bushes," quite a

distinction—and probably means *Scutellaria*. In Beach's Dispensatory I am informed that Eyebright is *Mitchella repens*. The *Arenaria* however must be considered as that wonderful English herb, "commended by some to cleere the eyes of dimnesse and no less accounted of to helpe stitches in the sides."

Blew Flower de luce. *Iris versicolor*.

Yellow bastard Daffodil, it flowereth in May, the leaves are green with black spots. Probably *Erythronium Americanum*.

Dogstones, a kind of *Satyrion* whereof there are several kinds groweth in our salt marshes. Liparis or else *Orchis*; many species are found in New England in meadows, which the author seems to confound in several instances with salt marshes.

Watercresses. *Cardamine* sp.

Red Lillies, which grow all over the country innumerable among the small bushes and flower in June, are the *Lilium Philadelphicum* mistaken for *Lilium bulbiferum* of the "English" gardens.

Wild Sorrell is *Rumex acetosella*.

Alder's Tongue, misprint for Adder's Tongue: *Ophioglossum vulgatum*.

Oneblade. *Smilacina bifolia*, the young plant with a single leaf.

Lilly Convallie, with the yellow flowers, grows upon Rocky Banks by the sea. I consider this as being the *Solidago sempervirens*. Consult Parkinson's Theater of Plants; Index page 1737.

Water Plantain, here called *water suck* Leaves. *Alisma plantago*.

Sea Plantane, three kinds. *Plantago maritima*, *Triglochin maritimum*, and perhaps *Statice Limonium* are intended.

Small Water Archer. *Sagittaria variabilis*, var. *angustifolia*.

Autumn Bell Flower. Here we have our *autumnal* fringed gentians, *Gentiana crinita*.

White Hellebore, "which is the first plant that springs up in this country and the first that withers; it grows in deep black mould and wet; in such abundance, that you may in a small compass gather whole cart loads of it." This fine

showy native doubtless attracted the eye of our author because so similar to the *Veratrum album* of Europe. It is known to our flora as *Veratrum viride*. With the Indians, it seems to have entered largely into their medicines, the pounded roots being laid upon their wounds, and employed for aches, and even for that most tormenting of all, the toothache; likewise for a cutaneous disease described as *Herpes miliaris*.

Arsmart, both kinds; by which I understand *Polygonum hydropiper* and *P. persicaria*, noticed also in Rev. Dr. Cutler's paper by the identical, but not very fastidiously chosen appellation.

Spurge Time, it grows upon dry sandy Sea Banks and is very like to Rupterwort; it is full of milk. In this may be recognized *Euphorbia polygonifolia*.

Rupterwort, with the white Flower, is probably *Euphorbia maculata*, the true rupturewort of England or *Herniaria glabra* not being indigenous.

Jagged Rose pennywort, *Hydrocotyle Americana*.

Soda bariglia or massacote, the ashes of soda of which they make Glasses. *Bariglia* Italian for barilla; the plant is *Salsola Kali*, still common on the sandy sea shores.

Glasswort, here called Berrelia, it grows abundantly on the salt marshes. This is *Salicornia herbacea* and *mucronata*. The same is now called Samphire. The brilliant deep crimson hue of the salt marshes is owing to the presence of the latter plant.

Saint John's wort. *Hypericum perforatum*: a very common weed in some soils.

St. Peter's wort. *Hypericum ellipticum*?

Speedwell Chickweed. *Veronica serpyllifolia*?

Male fluellin or Speedwell. *Linaria canadensis*. An autumnal weed in gravelly spots.

Upright Peniroyal, wild mint, cat mint. The first two would seem to be our pasture species of *Pycnanthemum*; the last *Nepeta cataria*, concerning which the old herbalists gravely affirm that it "is the ordinary Garden sort of some, and the *Mentha felina*, because cats delight both to smell and eat thereof and gladly rub themselves against it."

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Egrimony. *Agrimonia Eupatoria*.

The lesser Clot Bur. *Xanthium strumarium*.

Water lilly, with Yellow Flowers. (*Nuphar advena*.)

Our ingenious author has picked up some novel acquaintance with this plant, for he assures us that "the *Indians* eat the Roots, which are long boyling; they taste like the Liver of a Sheep: the Moose Deer feed much upon them, at which time the *Indians* kill them, when their heads are under water."

Dragons; their leaves differ from the kinds with us, they come up in June. These seem to be our *Arum triphyllum* or Indian turnip: similar to the British "Dragons," but more beautiful in inflorescence.

Violets of three kinds—the white violet, which is sweet but not so strong as our Blew violet (*Viola blanda*); Blew Violets without scent, (*Viola cucullata*) and similar, and a Reddish violet without scent; they do not bloom till June. This "Reddish violet" may be a variety of *Viola primulæfolia*, occasionally seen. The deliciously perfumed violets of modern gardens is the true British *Viola odorata*: we have nothing to compare with it among our numerous species. The "New England Rarities Discovered" in violets, must have been a disappointment on this score.

Woodbine. *Lonicera (Xylosteum) ciliata*? Marvellous virtues are ascribed to this elegant shrub.

Salamon's Seal, of which there are three kinds; the first common in England (the New England plant being *Polygonatum latifolium*, easily mistaken for *P. multiflorum*); the second the *Virginian Salamon's Seal* (another species, viz. *P. biflorum*;) and the third, differing from both, is called Treacle Berries, having the perfect taste of Treacle when they are ripe: or (*Smilacina racemosa*,) described by Parkinson in glowing colors, whose berries are "each of the bignesse of a Juniper berry, yellowish before they be ripe and finely spotted with blood red speckles, which after they have long so abidden are worn out by the ripening of them and changed red like a cherry, whose pulp or juice is sweet." Our author adds that they "certainly are a very wholesome Berry and Medicinable."

Doves foot. *Geranium Carolinianum*?

Herb Robert. *Geranium Robertianum*.

Knobby Crane's Bill. *Geranium maculatum*?

Raven's Claw. This may be some acrid species of *Ranunculus*, inasmuch as we are told "that it is admirable for Agues."

So valuable a "New England Rarity," it would be well were it "Discovered" again.

Cinque Foil. *Potentilla Canadensis*.

Tormentilla. *Potentilla argentea*?

Avens with the Leaf of *Mountain Avens* and Root of English Avens. (*Geum album*, which is said to resemble *Geum urbanum* of Europe.)

Strawberries. *Fragaria Virginiana*.

Wild Angelica, majoris and minoris, *Archangelica atropurpurea*, and perhaps *Osmorhiza brevistylis*.

Alexanders, which grow upon Rocks by the Sea shore.—*Ligusticum Scoticum*?

Yarrow with the white Flower. *Achillea millefolia*.

Columbines of a flesh colour, growing upon Rocks. *Aquilegia Canadensis*.

Oak of Hierusalem. *Chenopodium botrys*, or Jerusalem Oak of the gardens.

Oak of Cappadocia. *Ambrosia artemisiæfolia*, the Roman Wormwood or Bitter weed: a troublesome plant in potato fields.

Goose Grass or Clivers. *Galium* sp:

Fearn. Species of *Filices*, and the Saxon name for the following viz:

Brakes. *Pteris aquilina*.

Woodserrel with the yellow flower. *Oxalis stricta* confounded with *Oxalis corniculata*, which some imagine to be identical.

Elm, *Ulmus Americana*, taken for *Ulmus Campestris*.

Line Tree. *Tilia Americana*, taken for *Tilia Europea* and likewise some variety which would constitute the "both kinds" specified by the Author. The old Herbals designate a male and female kind, but this is doubtless an error. We call it Linden tree or Basswood: hence Lin or "Line tree."

Maple. *Acer* sp:

Dew Grass. *Dactylis Glomerata*, called by us now, Orchard grass and cocks' foot grass.

Earth nut, which are of divers kinds, one bearing very beautiful Flowers. *Aralia Trifolia*? and *Apios tuberosa*.

Fusse Balls, very large. *Lycoperdon* sp: of which *L. gemmatum* grows to a "very large" size.

Mushrooms, some long. *Agaricus*, *Phallus* etc.: others jagged, flat, round. *Polyporus*; none like our great Mushrooms in England; of these some are of a scarlet colour; *Peziza*; others of a deep yellow; *Cantharellus*. Our Author did not seem to be a very minute observer in this department of Botany, as "Discoveries" of later date have shown not only similarity to the "great Mushrooms in England" but a very great abundance of different kinds.

Blew flowered Pimpernel. *Veronica Americana*?

Noble Liverwort, one sort with white flowers, the other with Blew. *Hepatica triloba*, *Americana* and variety *alba*.

Black Berry. *Rubus villosus*, mistaken for *Rubus fruticosus* (Eng. Bot. 715).

Dew Berry. *Rubus Canadensis*, instead of *Rubus cæsius* (Eng. Bot. 826.)

Raspberry, hero called Mulberry. *Rubus hispidus*, still called *mulberry* in some parts of New England, and eaten only by the children and perhaps by the birds. The *Rubus idæus* is the Raspberry of England, while the *Rubus strigosus* Mx: is our raspberry, a fine flavored fruit.

Gooseberries of a deep red color. *Ribes hirtellum*, instead of *Ribes uva crispa*.

Hawthorn, the Haws being as big as Services (*Pyrus domestica* of the English Botany 350,) and very good to eat and not so astringent as the Haws. (*Cratægus oxyacantha* of England.) These lauded "New England Rarities Discovered" here, in such remarkable Haws, are probably the June berries of our swamps;—*Amelanchier botryapium* and its typical form or *Canadensis*, whose fruits are quite palatable.

Toad flax. *Linaria vulgaris*, a common, handsome, but tedious weed. (See Eng. Bot. 658).

Pellamont or Mountain Time, perhaps *Teucrium Canadense*; but very doubtful to me.

Mouse Ear, minor, *Hieracium Canadense* or perhaps



*Gronovii*, mistaken for *H. Pilosella* of the Eng. Botany 1098.

Juniper, which Cardanus saith is cedar in hot countries and *Juniper* in cold countries; it is here very dwarfish and shrubby, growing for the most part by the Seaside. This is our *Juniperus Virginianus*, at that early period presenting the same bushy and stunted appearance as it does now upon our washed away and bare rocky pastures.

Willow. *Salix* spp:

Spurge Lawrel, called here *poyson berry*. It kills the English cattle if they chance to feed upon it, especially calves. *Kalmia angustifolia* taken for *Daphne Laureola*, (Eng. Bot. 119.)

Gaul or Noble Mirtle. *Myrica Gale*, Sweet Gale, hence "*Gaul*;" also called *Sweet Willow* by Parkinson.

Elder, common also to England. *Sambucus Canadensis*, for *S. nigra*.

Dwarf Elder. This is the *Sambucus Ebulus* of England, (Eng. Bot. 475) but what New England plant was taken for it, I am unable to determine.

Alder. *Alnus* sp: for *Alnus glutinosa* of English Botany 1508.

Hazel. *Corylus* sp: for *Corylus avellana*.

Filberd, both with hairy husks upon the nuts and setting hollow from the Nut and filled with a kind of water of an astringent taste, &c. *Corylus Americana* and *C. rostrata*, for *Corylus Avellana* of the cultivated kinds in England, having large fruits. We are told that it "(the water)" is very good for sore Mouths and falling of the Pallat, as is the whole green Nut before it comes to the Kernel burnt and pulverized, the Kernels are seldom without Maggots in them." (*Rhynchæ-nus nasicus*.—Say.)

Our treatise of "New England's Rarities Discovered" favors us with "two figures of the Walnut," which sadly remind us of the Pig nut (*Carya glabra*) and of an inferior variety of the Shagbark (*Carya alba*), giving rather a poor idea of our New England nuts—and of which it well says that "the Nuts differ much from ours in Europe \* \* \* all of them but thinly replenished with Kernels." But as a pleasant set

off to this depreciation of our walnuts, peculiar to North America, (the walnut of Europe, being *Juglans regia*, and introduced there from Persia,) we have

Chestnuts, very sweet and may be (as they usually are) eaten raw; the Indians sell them to the English for twelve pence the bushel. These famous chestnuts are our variety of *Castanea vesca*, which are smaller and "sweeter" nuts than the European form.

Beech. *Fagus ferruginca*, mistaken for *F. sylvestris*.

Ash. *Fraxinus Americana* and other species, taken for *F. excelsior* of Great Britain. Quick Beam or Wild Ash, *Pyrus* (Sorbus) *Americana*. Our Mountain Ash, represents the *P. aucuparia* or the Rowan Tree, Roan Tree, Wichen Tree of England, concerning which there are many superstitious beliefs prevalent in that country; but of which happily none are attached to our species.

Birch White and Black. *Betula alba* variety *populifolia* and *B. nigra* for *Betula alba* of Great Britain.

Poplar but differing in the Leaf. *Populus tremelloides* the most common kind instead of *P. nigra* of Europe.

Plumb Tree, several kinds bearing some long, round, white, yellow, red and black plums, all differing in their fruit from those of England.

This list of plums seems, at first sight, rather formidable.— The common plum tree of England is the *Prunus domestica* and is there found in hedges; while the bullace plum (*P. insititia*) is the other British kind. The first named has been considered only a variety of *Prunus spinosa* or *sloe*, but whether this be so or not, all the fine varieties of garden plums have originated from the *Prunus domestica*.

What our author therefore found as New England Rarities, representing the English plum tree, I am inclined to consider as being the Canada plum (*Prunus Americana*), which bears the "some long," and are yellow, orange or red; the Beach plum (*Prunus maritima*) which bears the "round" and varies from purple with a glaucous hue to crimson; but what the "black" and the "white" are, I am at a loss to conjecture, unless *Prunus insititia* were really indigenous to this country and

was then noticed by our author; the fruits of this species are black and also white in colour and likewise "round" in their shape.

Wild Purcelane. *Portulacca Oleracea*: this seems to be the plant intended by "wild" as a smaller and more depauperated form of the garden sorts, which becomes larger by high and nutritious cultivation. *Parkinson's Theater of Plants*, p. 723, designates the plant thus as above stated.

Wood wax, wherewith they dye many colours. If this is the *Genista tinctoria*, as the familiar name seems to imply, it would appear that if introduced, this weed was already established to considerable extent as early as the time of the visit to New England of our author.

Red and Black Currants. The black currant is *Ribes floridum*, resembling *Ribes nigrum* of Europe. The red currant, *Ribes rubrum*, has been observed of indigenous growth in the cold woods and bogs of North America, and if it came under the observation of Mr. Josselyn, Gent, it would help to prove it a native of both Europe and this country.

Spunk. Some corky and fibrous species of *Polyporus*, which is described as an "excrecence growing out of the Black Birch. The Indians use it for Touch-wood and therewith they help the *Sciatica* or Gout of the Hip or any great Ach, burning the Patient with it in two or three places as upon certain Veins."

## II. OF SUCH PLANTS AS ARE PROPER TO THE COUNTRY.

Indian Wheat, of which there are three sorts, Yellow red and Blew. This "Indian Wheat" is no other than our Indian Corn. (*Zea Mays*.) We are told that "the Blew is commonly ripe before the other a month: Five or six grains of *Indian* Wheat hath produced in one year six hundred." This "blew" variety was probably a Canadian sort cultivated by the Indians and brought here by the traffic between the different tribes. The yield seems very little to us, but we should remember that the soil was unmanured and the size of the ears quite short and small.

Bastard Calamus. Our *Sweet Flag* or *Flagroot* (*Acorus calamus*.) The Calamus of "the apothecaries shoppes" seems to have been some foreign drug, said to have come from Syria and Arabia, and called the true aromatic calamus or Reed, or *Calamus aromaticus*: the pleasant odour of which, is said to scent the air, even from the growing plant. When cut down, dried and powdered, it was employed by the Jews as an ingredient in their richest perfume: see Exodus xxx: 23. Canticles iv. 14, &c. &c. Consult Harris' *Natural History of the Bible*, p. 66. etc. Parkinson gives a very good figure of the flagroot and calls it the *Acorus verus*. Josselyn tells us, that his *Calamus aromaticus* "agrees with the description but is not barren. They flower in July and grow in wet Places as about the Banks of Ponds." The "barren" condition of flagroot seems to be only in gardens and in a dry soil.

Wild Leeks. (*Allium Canadense*), which the Indians use much to eat with their Fish.

A plant, like *Knave's Mustard*, called New England Mustard. It is difficult to explain what this plant may have been.

Mountain Lillies, bearing many yellow flowers, turning up their Leaves, like the Martagon or Turk's Cap, spotted with small spots as deep as Saffron. *Lilium Canadense*.

One Berry or True Love. *Cornus Canadensis*.

Tobacco, there is not much of it Planted in New England: (*Nicotiana tabacum*) the Indians make use of a small kind, with short round Leaves called *Pooke*. *Nicotiana rustica* was used by the Indians, and stray plants from their rude culture is to be met with in "old fields from New York westward," says Prof. Gray. Whether this is the "Pooke" of the Indians or whether they used *Lobelia inflata* or some other acrid plant remains in much mystery. This Poke or pooke was an odious article to the English; and it would have been as well were the Virginian weed in the same estimation.

Hollow-Leaved Lavender, (*Sarracenia purpurea*). The description of this fine plant "proper to the Country" and really worthy of being one of "New England's Rarities Discovered," is so unique that I shall transcribe it at length.— There is also a very good figure by which the plant in question

was easily recognized. "Hollow Leaved Lavender is a plant that grows in [Salt] Marshes overgrown with Moss, with one straight stalk about the Bigness of an oat straw, better than a cubit High; upon the Top standeth one fantastical Flower; the Leaves grow close from the Root, in shape like a Tankard, hollow, tough and always full of Water; the Root is made up of many small strings growing only in the Moss and not in the Earth; the whole Plant comes to its Perfection in *August*, and then it has Leaves, Stalks and Flowers as red as Blood, excepting the Flower which has some yellow admixt. I wonder where the knowledge of this Flower has slept all this while, i. e. above forty years?"

I find in Parkinson page 1235 a very good figure also, and he assures us that "John Tradescant, the younger, found this very plant in Virginia, which he brought home and which groweth with him."

This the purple Side saddle flower is one of the finest and most ornamental of our native plants, and well known for its singular beauty. Parkinson's Theater of Plants, was published in 1640, while John Josselyn, Gent's Treatise was published in 1675, so that he seems to have "slept all this while" in ignorance of the hollow leaved Lavender, rather than as he supposes, others about him had done. The term, Lavender, is probably expressive of the form of the leaf: *lavo luvandum*, to wash, &c. *Quere*—hence the derivation of pitcher plant or forefather's pitcher, or Tankard and the like.

Live Forever, a kind of Cudweed. *Antennaria margaritacea*.

Tree Primrose, taken by the ignorant for Scabious. A solar Plant some will have it. *Oenothera biennis*. Cutler informs us, that "this plant is very generally known by the name of *Scabious*, and seems to have been mistaken for the *Scabiosa arvensis* of Linnæus."—*Account of Indigenous Vegetables* p: 438., &c.

Maiden Hair or *Capillus Veneris verus*, which ordinarily is half a yard in length. *Adiantum pedatum*, instead of *Adiantum Capillus Veneris*, an elegant fern in our shady and rocky woods. It were natural to mistake the New England form for

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the true "maiden hair which grows in abundance here, from where there may be had good store."

Pirola, two Kinds, both of them excellent wound Herbs.—One of these kinds was *Chimaphila umbellata*, of which he speaks at length anon; and the other was probably *Pyrola elliptica*, now vulgarly known as Shin leaf and Lamb's lettuce.

Homer's Molley. *Allium vineale*?

Lysimachus or Loose Strife; it grows in the dry grounds in the open Sun four foot high, Flowers from the middle of the Plant to the top, the Flowers purple, standing upon a small sheath or cod, which when it is ripe, breaks and puts forth a white silken down, the Stalk is red and big as one's finger. This minute description introduces us to *Epilobium angustifolium*, a prominent and showy plant on waste places and burnt grounds.

Marygold of Peru, of which there are two kinds—one bearing black seeds, the other black and white streaked; this beareth the fairest flowers, commonly but one upon the very top of the stalk. This seems to be *Helianthus annuus* or common sun flower, the seeds of which are sometimes streaked in the way specified. It might have been cultivated by the Indians, it being indigenous to the warmer parts of North America.

Sea Tears, they grow upon the Sea Banks in abundance, they are good for the Scurvie and Dropsie boyled and eaten as a Sallade and the Broth drunk with it. Quere, Sea Tares? (*Lathyrus maritimus*.)

Indian Beans, falsely called *French Beans*, are better for Physick and Chyrugery than are Garden Beans. *Probatum est*.

These indian beans are *Phaseolus vulgaris* or *Haricot* of the French. They are also called Kidney beans, and well known to us now-a-days as bush beans. The "garden beans" are *Faba vulgaris* or flat Winsor beans, still in repute in England as a table esculent, but despised by us. Our bush beans were well known by the early indian tribes and used by them in preparing *succatash*, showing that America is their native country—though probably from the tropics. The same is true of the next in the List of plants proper to the country, viz :

Squashes, but more truly *squanter squashes*, (Quere *Wanter*?) a kind of Mellon or rather Gourd, for they oftentimes degenerate into Gourds; some of these are green, some yellow, some longish like a Gourd, others round like an Apple, all of them pleasant food boiled and buttered and seasoned with spice. [I consider this descriptive of our winter squashes; even the term *Wanter Gourds* to be found in Parkinson's Theater of Plants p. 770 may be a misprint—and that they were Indian cultivated vegetables] but the yellow squash, called the Apple squash, because like an apple and about the bigness of a Pomewater, is the best kind; they are much eaten by the Indians and the English, &c. &c. Here we have the Cemelon or *Cymung* (*Curcubita melopepo*), or else the orange squash, which in size would be like a Pomewater apple.

To the same Indian cultivation we may trace also the next of "New England's Rarities Discovered" in the

Water Mellon (*Cucumis citrullus*); it is a large fruit, but nothing near so big as a Pompion, colour, smoother and of a sad Grass green, rounder, or more rightly *sap green* with some yellowness admixt when ripe; the seeds are black, the flesh or pulpe exceedingly juicy. It is often given to those sick of Feavers and other hot Diseases with good success.

New England Daysie or Primrose is the second kind of Navel wort in *Johnson* upon *Gerard*. It flowers in May and grows amongst Moss upon hilly Grounds and Rocks that are shady. It is very good for Burns and Scalds. May not this be *Mitella nuda*?

Briony of Peru (we call it though grown hear) or rather Scammony; some take it for *Michoachan*. The green juice is absolutely Poison, yet the root when dry may be safely given to strong Bodies.

I am inclined to suppose this to be *Solanum Dulcamara* or Bitter sweet, confounded with *calystegia sepium*, which is called Scammony, the roots of which, says Cutler, "are an active purgative." The "Michochan" of Canada is *Phytolacca decandra*, our Garget or Poke root, so well known to agriculturists as a veterinary curative. But this must be conjectural, in my present condition of acquiring any positive information.

Wild Damask Roses, single, but very large and sweet but stiptick. *Rosa Carolina* or Swamp rose.

Sweet Fern, the Roots run one within another like a net being very long and spreading abroad under the upper crust of the earth, sweet in taste, but withal astringent, much hunted after by swine. The Scotchmen that are in New England have told me that it grows in Scotland. *Pteris aquilina*, concerning which Lightfoot in his *Flora Scotica* confirms the statement of the fondness of swine for the root.

Sarsaparilla, a Plant not yet sufficiently known by the English. Some say it is a kind of Bindweed.

We have in New England two plants that go under the name of Sarsaparilla; the one not above a foot in height without thorns, (*Smilax herbacea*,) which however grows from two to six feet high in richer soils, the other having the same Leaf, but is a shrub as high as a Gooseberry Bush and full of sharp Thorns, (*Smilax rotundifolia*,) which however, climbs to a great height and extends itself very much. This I esteem as the right by the shape and savour of the Roots; but rather by the effects answerable to that we have from other parts of the world. It groweth upon dry sandy Banks by the Seaside and upon the banks of Rivers so far as the Salt water flows and within Land as some have reported.

The true Sarsaparilla, is the root of a Smilax, viz: *Smilax Surza*; and the root stock of another, the *Smilax china* is eaten in China instead of rice. What virtues may reside in our Green briar or Smilax rotundifolia, remains to be proved by more modern wisdom than that of our author.

Bill Berries, two kinds, Black and sky coloured, which is more frequent. *Vaccinium corymbosum* and variety *atro-arpum*.

Knot berry or Clowde Berry. *Rubus hispidus* unless, which is hardly probable, the *Rubus chamamorus*. What we term *blackberries* used to be called *Knot berries*, as the pips are collected into bunches or knots making the fruit.

Sumach differing from all I did ever see in the Herbalists: our English cattel devour it most abominably, leaving neither Leaf nor Branch, yet it sprouts again next spring. *Rhus glabra* or else *Rhus copallina*.



Wild Cherries, they grow in clusters like Grapes, of the same bigness, blackish, red when ripe and of a harsh taste, (*Prunus Virginiana*;) they are good for Fluxes; transplanted and manured they grow exceedingly fair.

Board Pine (*Pinus strobus*,) is a very large tree two or three Fathom about. It yields a very sovereign Turpentine for the curing of desperate Wounds. The Larch Pine (*Larix Americana*), which is the only tree of all the Pines that sheds its Leaves before winter the other remaining green all the year, &c. &c. This is the tree from which we gather that useful and purging excrement Agarick.

This famous "Agarick" must have been some perennial woody species of *Polyporus*, mistaken for *Polyporus officinalis* of the old writers, who attributed to it many medicinal virtues; but now in disuse. See Fries *Syst. Myc*: I. 365. Also Burnet's *Outlines of Botany*. Vol. I. p. 248. Parkinson's *Theater of Plants*, p. 249, for figures.

Spruce is a goodly Tree, of which they make masts for Ships and Sail yards. *Abies nigra* and *alba*.

Hemlock Tree, a kind of spruce; the bark of this Tree serves to die tawny; the Fishers tan their Sails and Nets with it. *Abies Canadensis*.

Cran Berry or Bear Berry, (*Vaccinium macrocarpum*,) because bears use much to feed on them, is a small trailing plant that grows in [Salt] marshes that are overgrown with Moss; the tender Branches (which are reddish) run out in great length, lying flat on the ground, where at distances, they take root overspreading sometimes half an Acre, sometimes in small patches about a Rod or the like; the Leaves are like Box, but greener, thick and glistening; the Blossoms are very like the flowers of our *English Night Shade*, after which succeed the berries, hanging by long small footstalks, no bigger than a hair; at first they are of a pale yellow colour, afterwards Red and as big as a cherry; some perfectly round, others oval; all of them hollow, of a sower astringent taste; they are ripe in *August* and *September*.

Vines, much differing in the Fruit, all of them very fleshy, some reasonably pleasant, others have a taste of Gunpowder, and these grow in swamps and in low wet grounds. (*Gualtheria*

*procumbens.* *Chiogenes hispidula.* *Arctostaphylos uva-ursi.* *Vaccinium* *Vitis Idæa*, &c. &c.

### III. OF SUCH PLANTS AS ARE PROPER TO THE COUNTRY AND HAVE NO NAME.

#### 1.

Pirola or Winter green, that kind which grows with us in England, (*Pyrolæ spp.*) is common in New England; but there is another plant which I judge to be a kind of *Pirola* and proper to this Country a very beautiful plant.

Appended to the above description, is a very good figure of a single Leaf, over which is inscribed "*The Leaf of the Plant judged to be a kind of Pirola.*" This quaint little figure suggests the Rattlesnake plantain, *Goodyera pubescens*. It groweth not every where, we are also informed, but in certain small spots overgrown with moss, close by swamps and shady: they are green both in summer and winter.

The "New England's Rarities" increase in number considerably now under our 3d section, and we are next presented with the figure of a singular plant, with four regularly circular leaves, with diametrical lines meeting in the centre, each supported on a stiff straight stalk and rising from the crown or apex of a fleshy looking root, somewhat in shape between a beet and a turnip. I have in vain endeavored to guess what most rare plant our author could have chanced upon. The most probable solution is that of an aquatic, with circular floating leaves. But let us listen to his story as follows:

#### 2.

This Plant was brought me by a neighbor who wandering in the woods to find out his strayed Cattle lost himself for two or three days, being as he ghesed eight or ten miles from the seaside. The Root is pretty thick and black, having a number of small black strings growing from it; the stalk of the Leaves about a handful long: the Leaves were round and about as big as a Silver Five Shilling piece, of a sap or dark green colour with a line or Ribb as black as jeat round the circumference, from whence came black lines or Ribbs, meeting in a black spot in the centre. If I had staid longer in the country I should have made purposely a journey into those

Parts where it was gathered and discover if possible, the stalk and flower; but now I shall refer it to those who are younger and are better able to undergo the pains and troubles of finding it out, for I understand by the Natives that it is not Common, i. e. everywhere to be found, no more than the embroidered *pirola*, which is also a most elegant plant and which I did endeavor to bring over, but it perished at Sea.

Clowne's Allheal of New England, is another wound herb not inferior to ours, but rather beyond it; some of the English practitioners take it for *Vervain* and use it for the same, wherein they are grossly mistaken.

Notwithstanding the judgment of our author against some English practitioners, I am inclined to suppose the plant in question is no other than *Vervain* or *Verbena hastata*. See his minute description on p. 70 of his work.

Next we have a singular little figure of our Skunk Cabbage, *Symplocarpus fetidus*, accompanied by the barren stem of the horsetail rush *Equisetum sylvaticum*, also its root and leaf, but which J. Josselyn, Gent., makes out to be another of "New England's Rarities Discovered" by himself, and for which he is entitled to all the credit of such an exploit. He accordingly says :

3.

This plant is one of the first that springs up after the *white Hellebore*, in the like wet and black grounds commonly by Hellebore, with a sheath or hood like Dragons; but the pestle is of another shape, that is, having a round purple Ball on the top of it, beset as it were with Burrs; the hood shoots forth immediately from the Root before any Leaf appears, having a green sprig growing fast by it, like a small *Horsetail*; about the latter end of *April*, the hood and sprig wither away, and then in the Room comes forth a bud, like the Bud of the walnut tree but bigger: the Top of it is of a pale green colour, covered with a brown skin like an onion, white underneath the Leaves, which sprout in time out of the Bud, grow from the Root with a stalk a foot long and as big as great *Bur Dock* Leaves and of the same colour; the Roots are many and of the bigness of the stem of a Tobacco Pipe and very white; the whole Plant scents as strong as a Fox; it continues *till August*.

Next we have—"A Branch of the Humming Bird Tree," which is no other than *Impatiens fulva* or Jewel Weed, and a very good representation.

## 4.

This plant the Humming Bird feedeth upon, it groweth also in wet grounds and is not at its full growth till July. It is garnished at the Top with many dangling yellow Flowers of a bright yellow colour, &c.

In August, 1670, in a Swamp among Alders I found a sort of Tree Sow Thistle, the stalks of some, of two or three inches about, as hollow as a Kix and very brittle, &c. *Lactuca elongata*, a succulent plant from two to nine feet high, and with a hollow stem or stalk.

## 5.

This Plant I found in a gloomy dry wood, under an Oak, 1670, the 18th of August; afterwards I found it in open Champain Grounds, but somewhat scarce, the root is about the bigness of a French walnut, the bark thereof is brown and rugged, within of a yellowish colour, from whence ariseth a slender stalk no bigger than our oat straw, above two cubits in height, somewhat better than an handful above the Root shooteth out one Leaf of a grass green colour, and an inch or two above that another Leaf and so four or five at a great distance one from another, till they come within a handfull of the Top, where upon slender Footstalks grow the Flowers four or five more or fewer, clustering together in long green husks, milk-white, consisting of ten small Leaves snipt a little on the edge with purple.

Then follows a figure of this peculiar "Rarity" in its full growth, which I should call *Nabatus albus*.

## 6.

We are presented with a very good cut of *Chelone glabra* or Snake's Head, of which we are told that the Plant flowers in August and grows in wet ground; it is about three or four foot in height having a square slender stalk champered hollow and ruff; the Leaves grow at certain distances, one against another of the colour of *Egrimony*. The Flowers are of one Leaf, shaped like the head of a Serpent, opening at the top like

a mouth and hollow throughout, containing four crooked poyntals. The whole Flower is milk white, the inside of the chaps reddish, the Roots I did not observe.

## 7.

We have a figure of *Cornus Canadensis*, already described on page 104, which the author takes for a variegated Herb Paris, True Love or One Berry or rather One Flower.

The Herb Paris of England and Europe is however quite another plant viz : *Paris quadrifolia*. Compare *Eng. Bot.* Plate 7, to see that it has no relation to the "New England Rarity."

A famously executed figure next introduces us to "The small Sun flower or Marygold of America," which I suppose to be intended for *Helianthus divaricatus* of our thickets and about neglected fields. A long and minute description follows this figure, which does not serve much to elucidate the point, the cut being far preferable.

#### IV. OF SUCH PLANTS AS HAVE SPRUNG UP SINCE THE ENGLISH PLANTED AND KEPT CATTLE IN NEW ENGLAND.

Couch grass. *Triticum repens*.

Shepherd's purse. *Capsella Bursa-pastoris*.

Dandelion. *Taraxacum dens-leonis*.

Groundsel. *Senecio vulgaris*.

Sow Thistle. *Sonchus oleraceus*.

Wild Arrach. *Atriplex hastata*.

Night Shade with the white Flower. *Solanum nigrum*.

Nettles stinging, which was the first plant taken notice of. *Urtica urens*. This sort used to be planted in gardens, and even forced, as a vegetable, and is "the first plant taken notice of," in Parkinson, p. 441.

Mallows. *Malva rotundifolia*.

Plantain, which the Indians call *English Man's Foot*, as though produced by their treading. *Plantago major*.

Black Henbane. *Hyoscyamus niger*.

Wormwood. *Artemisia absinthium*.

Sharp pointed Dock. I am unable to distinguish this plant

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by Parkinson's figure on p. 1214, of "*Lapathum acutum minimum*."

Patience. Some species of *Rumex* similar to the *Rumex Patientia* of Europe. The docks were once in great repute as medicines, and the length of time which this species required to effect a cure gave it the name of "Patience."

Bloodwort. *Rumex sanguineus*. This and the last were used as pot herbs. Our Author "suspects that Adder's Tongue" belongs to the list, which occurring in such company I am inclined to think may be *Rumex acetosella*.

Knot Grass. *Polygonum aviculare*.

Cheekweed. *Stellaria media*.

Compherie, with the white Flower. *Symphytum officinale*.

Mayweed, excellent for the Mother; (*Maruta cotula*) or Stinking Chamomile, an old specific; it seems that "some of our *English* Housewives call it *Iron wort*, and make a good unguent for old sores," which perhaps may be true.

The Great Clot Bur, *Lappa major*.

Mullein with the white Flower. *Verbascum blattaria*, variety, *flore albo*.

Here ends the enumeration of the plants, which constitute "New England's Rarities Discovered," but a continuation of Garden sorts follow, interspersed with original observations, from which, we learn among other facts, that "Pease of all sorts do thrive there and the best in the world. I never heard nor did see in eight years' time one worm eaten Pea."

We are also informed that "Southern wood is no plant for this Country."

"The seed of *Annis* is commonly eaten with a fly." p. 90.

"Pompions there be of several sorts, some proper to the Country; they are dryer than our *English* Pompions and better tasted; you may eat them green." p. 91.

The description of scenery, animals, minerals, &c. &c., which occupies this treatise, is of a similar character; and all render this early effort at our Natural History, an interesting reminiscence of olden time. In the *Collections* of the Massachusetts Historical Society, volume third of the Third Series, (1833,) may be found a reprint of "*An Account of two*

*Voyages to New England*," by the same author, and in which are interspersed similar observations upon the plants and animals then noticed by him.

*Friday, January 23, 1857.*

Evening meeting at half past seven o'clock. Rev. John L. Russell, Vice President, in the chair.

Records of preceding meeting read. Donations to the Library announced from John H. Neal, Caleb Foote, Henry Whipple, C. Benj. Richardson of Boston, M. A. Stickney, B. F. Mudge of Lynn, John H. Stone, James Ward, Warren & Sons of Sacramento, Cal.

Also, donations to the Historical Department from James Ward and H. M. Brooks.

The Cabinet Keeper reported donations from Israel P. Ward, C. F. Putnam and Mrs. George R. Mason.

F. W. Putnam, read a communication as follows :

*On the Armature of the Lower Bill of the Hatching Tringa Pusilla.* Wilson. BY DR. DAVID F. WEINLAND.

On the 6th of July last, I caught at Nahant a young of the common Peep (*Tringa pusilla*, Wils.) of our seashore. This bird could have been hatched from the egg hardly more than one or two days, for it still wore the hard, horny tubercle on the upper bill, which we find in all birds when hatching, and which serves to knock open the eggshell. But I was surprised to find a similar armature on the lower bill, though less prominent, which, as far as I know, never has been observed before. Now the upper horn, as we may call it, reaching a good deal beyond the lower, this latter one cannot work as a knocking hammer, as the upper does ; therefore I suppose that the horn on the lower bill serves only as a support for the upper bill while knocking ; this is the more likely, as the bill of this kind of birds is at that time rather long, slender and weak.

I am persuaded that this armature of the lower bill occurs in all *Tringa* ; it may even occur in all *Waders* when hatching.

In reference to the structure of this organ in the upper and lower bill, I will add, that it is not a mere excrescence of the sheath of the bill, but formed separately and only attached to it. On the contrary in turtles, where we find the same organ,

it is a mere excrescence of the sheath of the bill, and while in birds it drops at once, soon after hatching, in turtles it is gradually worn off. In both, however, birds and turtles, it consists of the same flat epidermal cells which compose also the horny sheath of the bill.

CAMBRIDGE, Dec. 1856.

*Friday, February 13, 1857.*

Evening meeting at half past seven o'clock, the President Daniel A. White in the chair.

An amendment to the Constitution proposed at the quarterly meeting in November last, was submitted to this meeting. The records of the preceding meeting read.

Donations to the Library were announced from Timothy Davis, M. C., Wm. H. Prince, Oliver Carlton, E. M. Stone of Providence, R. I., J. C. Holmes of Detroit, Mich.; L. A. H. Letour of Montreal, C. E., H. W. S. Cleveland, H. M. Brooks, M. A. Stickney.

Donations to the Cabinets from W. T. Julio, E. P. Sargent, Mrs. O. Parsons.

Letters lately received from C. M. Tracy of Lynn, and from Wm. Beals, of Murphy, N. C., were read.

A communication from the Proprietors of the Salem Athenæum, was presented to the meeting. It made proposals to the Essex Institute regarding its occupancy of a portion of Plummer Hall.

After some discussion among the members on the above subject, the following vote was adopted :

*Voted*, That a committee of five be appointed to consider the propriety of accepting the proposals of the Proprietors of the Salem Athenæum; ascertain the probable expenses incident thereon, and whether means can be procured to carry the same into effect and to report at the evening meeting two weeks hence.

Messrs. W. S. Messervy, Geo. D. Phippen, B. F. Fabens, James B. Curwen, S. B. Buttrick, were appointed on this committee.

B. F. Mudge read the following paper, exhibiting at the same time some sketches and drawings of boulders and other



objects of geological interest executed by members of the Exploring Circle of West Lynn.

### *The Salt Marsh Formations of Lynn.*

Within the bounds of Lynn, as in other towns on the sea coast of Massachusetts, we find a series of Salt Marshes, very peculiar among the most recent alluvial formations. Having some features in common with the fresh water formations of peat and bog meadows, these marshes are yet quite different in most of their characteristics.

Romney Marsh, embraced within the bounds of Lynn, Saugus and Chelsea, is about four miles in length by three fifths in its greatest breadth, and contains about one thousand acres. It is one of those salt marshes common to the coast of Massachusetts, so peculiar among the recent alluvial formations. It is much more firm and compact than most peat meadows. This is seen more particularly in the appearance of the Eastern Rail Road, which crosses it for three miles, without any particular settling into the marsh of the large body of gravel which forms that road.

A peat meadow is formed of the remains of leaves, grasses, bushes, trunks of trees and other vegetable matter, irregularly intermingled and in various stages of decomposition. The salt marsh, on the contrary, though composed of rich vegetable mould, has no distinct remains of plants other than the roots of grasses and occasional stumps and trunks of trees, which appear to have had their existence prior to the formation of the marsh. Through the whole depth of the brown soil of the marsh the roots of the saline grasses are intermingled in the same manner as when living; there being no apparent difference in the position of the roots of the plants now living and those in the lowest part of the deposit. The depth of this soil is from ten inches to seven feet or more, or according to Alonzo Lewis, Esq. the historian of Lynn, even twenty feet. It is very uniform in its appearance and without stratification, being compact and firmly bound together by the tenacious roots of the grasses. Below the marsh is a layer of sand, from two to seven feet in thickness, and still lower is a bed of fine compact clay; the clay in turn resting on a diluvian gravel.

The surface of the marsh is nearly a dead level, about one foot above ordinary high water mark and only overflowed by the higher Spring tides. The appearance of the marsh soil, indicates a gradual formation from the grasses, aided by the fine, rich sediment which the high tides occasionally deposit. The saline grasses grow only above ordinary high water mark, and

as the roots in the lowest part of the soil, even eight or more feet below the surface, are in their natural position, showing no distortion, we must conclude that their *situs* was above the high water line, and that the subsidence has been so gradual that the growth of the plants has never been interrupted.

Roots and stumps of trees, often three feet in diameter, are found in the marsh soil, but always at the bottom, with wide spread horizontal ramifications, indicating a growth on the spot on a thin soil then covering the strata of sand. These are almost always in the natural position of growth. This indicates that the soil was then above high water mark. They are mostly of a variety of white cedar.

In further proof of its subsidence, we find the salt marsh at low water mark, on the outer side of Long Beach, which connects, for a mile and a half, Lynn with Nahant, and in this soil we still find stumps of trees in their natural position. The marsh here is ten feet below the level at which the grasses which bind it together, and form its principal element, could have lived. Undoubtedly the marsh formation underlies the whole of this beach. That it also, at one time covered most of the area of Lynn harbor, is probable from the fact that stumps apparently in their natural position are still found in many places.

That the sea has encroached on this marsh, washing off large patches, is still within the memory and observation of many of our old inhabitants. The Nahant and Chelsea beaches have both moved landward. The progress of the latter is clearly seen, by a line of posts now appearing below the ridge of the beach, which was set for a fence, within its borders on the marsh.

The Saugus River flows through this marsh, for about a mile and a half, and in most of the course has a deep channel, deeper than the present amount of water would appear to require. Was not this channel formed when the land was at a higher level? The current of the river would keep it open after being once formed.

The clay bed, before mentioned, also extends under the diluvian of the level portion of the town to the foot of the hills, more than a mile from the sea. Near the hills it is above high water level, and from thence has a slight dip towards the sea, which brings its out-crop at the beach and in the harbor, from five to fifteen feet lower. Below this clay bed, which is on an average about six feet in thickness, the diluvium is filled with a current of clear water, which shows itself in numerous springs below the tide line. This water can be obtained at any point by boring through the clay, and in the lower parts of the city flows

over the opening. It has thus been turned to account in supplying steam engines and factories near the wharves; and at Swampscot beach affords an excellent supply for domestic purposes, by piercing the sand and clay.

The rate of subsidence is so gradual and slow that no indications of the cause is seen by any agent apparent to common observation. Whether the whole Eastern coast of Massachusetts is not slowly settling is a matter for the consideration of the geologist. We may hazard the conjecture, that the cause of the settling of this extensive marsh may be found in the current of water in the diluvium under the clay. The supply comes from the rocky ledges of the hills, and in its passage under the clay towards the sea, its only apparent outlet, it may take along in its volume small particles of the debris of the aluvium, and carry them to the ocean. This amount though small and slowly carried would ultimately accomplish the result. The numerous borings through the clay show that the current is quite strong. In many cases the volume of water which followed the auger, brought with it not only fine particles of sand, but pebbles half an inch in diameter.

The facts and phenomena which we have described as peculiar to the Lynn Marshes, we find to be characteristic of the extensive salt marshes of Ipswich, Rowley and Newbury.—Even the bed of clay and fresh water springs are found under like circumstances, showing the entire similarity of the formations.

On motion of George Andrews, a vote of thanks was passed unanimously, for the interesting communication of the author.

Voted, to adjourn.

*Friday, February 27, 1857.*

Evening meeting at half past seven o'clock, the President, Daniel A. White, in the chair.

Records of preceding meeting read.

Donations to the Library were announced from Wm. Brown, Wm. Mack, Alfred Stone, Charles Mason U. S. Commissioner of Patents, Wm. H. Prince, T. Ropes, Charles H. Galloup of Wenham, D. A. White.

Donations to the cabinets, from George A. Perkins, H. J. Pratt, Mrs. Kimball.

The committee appointed at the previous meeting to consider the propriety of accepting the proposals of the Proprietors of the Salem Athenæum, &c., submitted their report, which gave some details of the financial condition of the Institute, and which presented a probable estimate of the expenses to the Institute in their proposed apartments; also, an estimate of the expense attendant on removal and on such additional accommodations as are desirable in the arrangement of the collections and library, making the estimate to be about two thousand and five hundred dollars.

The subject was discussed by the President, Secretary, Geo. D. Phippen, John L. Russell, Robert Manning, J. F. Worcester, Stephen A. Chase, Henry F. King, Richard S. Rogers, after which the following vote was adopted :

*Voted*, that the report be referred to a Committee, to ascertain whether the amount necessary to defray the expense of removal, &c., can be obtained; and to report at a subsequent meeting.

This Committee consisted of Messrs. Richard S. Rogers, George D. Phippen, Stephen A. Chase, H. Wheatland, and G. A. Parker.

Adjourned.

*Friday, March 13, 1857.*

Evening meeting at half past seven o'clock, Gilbert L. Streeter in the chair.

Records of the preceding meeting read.

Donations to the library announced from H. Whipple & Son, Mr. Fletcher of Charlestown, Timothy Davis, M. C., George Adams of Boston, Peabody Institute at South Danvers.

Donations to the cabinets, from Edward H. Payson.

Letters from the Massachusetts Historical Society, Peabody Institute, O. F. Swasey, A. B. Almon, were read.

*Voted* to adjourn to Friday, March 20, at 7½ o'clock in the evening.

*Friday, March 20, 1857.*

An adjourned meeting at the hour of half past seven, was

held this evening, the Vice President, Rev. John L. Russell, presiding.

Records of preceding meeting read.

Donations to the cabinets were announced from J. C. Howard.

Donations to the library, from N. S. Howe of Haverhill, M. P. Wilder of Dorchester. Mrs. John Robinson, D. A. White, Trustees of the New York State Library, W. H. Kilby of Eastport, Me.

Letters from James H. Gregory of Marblehead, N. S. Howe of Haverhill, and F. W. Putnam, were read.

The hour was occupied by Gilbert L. Streeter in reading an account of the clergymen settled in Salem at the time of the Revolutionary war, it being a sequence to papers descriptive of Salem before that great event. The following is a brief abstract prepared by Mr. S. for these pages.

**THOMAS BARNARD OF THE FIRST CHURCH.** There were two pastors of the First Church at the time of the outbreak of the Revolution, the senior, Thomas Barnard, the junior, Asa Dunbar. Mr. Barnard was born in Andover, Aug. 16, 1716, and graduated at Harvard College in 1732. He was first settled in Newbury, but becoming obnoxious to the friends of Whitfield during the great excitement of that time, he felt impelled to resign his charge. He then studied and practiced law. He also represented Newbury in the Great and General Court. Returning to the profession for which he was peculiarly fitted, he was settled over the First Church in Salem, Sept. 18, 1755. In 1772, the failure of his health made it necessary to secure a colleague, (Mr. Dunbar,) but Mr. Barnard continued in his pastoral office until his death, Aug. 15, 1776, aged 60 years—having been pastor for twenty-one years. He left four children.

Mr. Barnard was a man of superior talents and acquirements, and of excellent character. Mr. Felt says, that "he possessed a strong and cultivated mind. He was much beloved by his society here, and highly esteemed by the public." "The congregation was celebrated during his ministry," says Mr. Upham, "for the intelligence, refinement, and high literary cultivation of its members, and he was universally regarded by his contemporaries as a most estimable and excellent clergyman." Dr. Eliot furnishes a similar account. He says:

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"More literary characters were members of this church than of any in the province \* \* \* He was esteemed and beloved by the wisest and best part of the community. His manner of preaching was grave, slow, and distinct. He had not sufficient animation in his delivery but his sermons were rational and judicious, calculated for hearers of thoughtful minds, without that *unction* popular preachers have, and which seems necessary to give a charm to public discourses. It was observed also, by men of good sense, that Mr. Barnard's style was not the most perspicuous. His favorite author was bishop Butler, whose writings are more remarkable for masterly reasoning, than fine turned sentences. In the deistical controversy, Mr. B. was superior to most divines, and he often made it the subject of his public discourses. In his sentiments he was considered as a follower of Arminius rather than Calvin; he was a semi-Arian of Dr. Clarke's school."

Mr. Barnard published sermons at the ordination of his brother Edward, in Haverhill, in 1743; of Josiah Bayley, at Hampton Falls, 1757; before the Society of Industry, 1757; at Artillery Election, 1758; at ordination of Whitwell, in Marblehead, 1762; at Election, 1763; Dudleian Lecture, 1768; a Funeral Sermon on Rev. Peter Clark, Danvers, 1768.

Mr. Barnard was the eleventh minister of the First Church in the order of succession. The meeting house was a huge, old-fashioned wooden edifice, with double galleries inside, and stood where its brick successor stands, corner of Essex and Washington streets, a spot consecrated to the worship of God ever since the early days when the devout Higginson thanked God that "here in Salem we have plenty of preaching and diligent catechising, with strict and careful exercise." A drawing of the building is preserved in the Institute.

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ASA DUNBAR. The colleague and successor of Mr. Barnard, Mr. Dunbar, was born in Bridgewater, May 26th, 1745, graduated at Harvard College in 1767, and was settled in Salem July 22d, 1772. The little that is known of Mr. Dunbar and his brief ministry of seven years, is highly favorable to his reputation. Mr. Bentley alludes to him as "a man of genius." Dr. Eliot speaks of his "extraordinary genius," and in the "Notices of the First Church and its ministers," he is alluded to as "this estimable man and minister." The Church records mention him as "admirably qualified for a Gospel preacher." It is probable that he preached to the acceptance of the more intellectual and cultivated portion of the congregation.

Mr. Dunbar's ministry was cut short by ill health. He

resigned in 1779, and subsequently removed to Keene, N. H. As his colleague (Mr. Barnard) had been a lawyer before he came to Salem, so Mr. Dunbar became one after he left. He practiced law in Keene—where he was popularly known as “the honest lawyer”—until his death June 22d, 1787, at the age of 42. He left six children.

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**JAMES DIMAN OF THE EAST CHURCH.** The minister of the Second Parish was a native of Long Island, a graduate of Harvard College in 1730, and settled in Salem in 1737. He continued his faithful service here during the protracted term of 52 years. He died October 8th, 1788, at the good old age of 81 years. Mr. Diman was a minister of the ancient puritan stamp. He has been described as a man of grave aspect, invested with the imposing dignity, rather stern, and awe-inspiring, peculiar to the ministers of the age of huge wigs.—He was an extreme Calvinist in his theology and a man of inflexible will. Previous to his settlement in Salem he served for two years as Librarian of Harvard College. In 1774, he was chosen chaplain of the Provincial Assembly, when that famous body met in this place and assumed an attitude of resistance to the royal authorities.

During the latter part of his ministry Mr. Diman had unfortunate difficulties with his society growing out of a desire of the latter to settle Mr. Bentley as an associate pastor. For several years no taxes were collected to pay his salary. He was even requested, by vote, to “desist from officiating”—which he refused to do. He was not upon speaking terms with prominent members of the society. This unhappy difficulty continued, with more or less bitterness, until his decease.

Mr. Diman lived in a house, yet standing, on Hardy street, adjoining the meeting house. A drawing of the latter is in possession of the Marine Society.

The only printed productions of his now extant, are, a Charge at Dr. Bentley's ordination, the Right Hand of Fellowship to Dr. Barnard, and a sermon on the hanging, for rape, of Bryan Sheehan, on the neck, in 1772.

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**REV. NATHANIEL WHITTAKER D. D. OF THE THIRD CHURCH.** A notice of the clergy, at the period under review, would be very incomplete if it did not give a prominent place to the REV. NATHANIEL WHITTAKER, D. D., pastor of the Church since known as the Tabernacle Church, then under

nominally Presbyterian government. He was one of the notabilities of the town, eminent by his talents and ability, influential through his zeal and activity, troublesome as a disputant and controversialist. He preached here fifteen years, during which time he was almost constantly engaged in some war of words upon the topics then occupying the public mind. He lived in the storm rather than in the sunshine, and was apparently well satisfied with his lot in this respect.

He engaged in all the current disputes of the day, and was by turns the foremost champion of a scheme of theology, a party in politics, and a sect in medicine. He was a pillar of Presbyterianism, and a standard-bearer of colonial rebellion.—He sustained a protracted and violent controversy with members of his society throughout his ministry, upon the merits of Presbyterian church polity, a controversy ending finally in his expulsion from the pulpit. His chief opponent in the society during this struggle, was the afterwards eminent statesman, Timothy Pickering. He also entered warmly into the controversy, in 1774, concerning the comparative merits of the American and English systems of inoculation for the Small Pox, a controversy which raged here in print and speech almost as injuriously as the disease itself. (It was at the time when the Hospital was erected in the Great Pasture, and also that on Lowell Island, and hundreds of our citizens entered those establishments as patients; when Timothy Pickering, jr. rode horseback to Albany to obtain the services of Dr. Latham, a famous practitioner of the English method of inoculation.—Dr. Whittaker then officiated in Salem and the neighboring towns as an inoculator by the American system.) Dr. Whittaker was an ardent and efficient advocate of the Revolution and both gave and took many of the hard blows which were then exchanged.

He was described by the late Dea. John Punchard, who knew him well, as “a man of uncommon intellectual powers—of extensive erudition—orthodox in sentiment—a distinguished preacher—of dignified, commanding personal appearance; and especially of consummate skill and tact in accomplishing his own purposes.

Dr. Whittaker was a native of Long Island, a graduate of Princeton College in 1752, and before his advent in Salem had preached in Norwich, Conn. He had also been abroad, and while in England attracted some attention, especially among the friends of Whitefield, the revivalist, including the countess of Huntingdon. In London, he preached and published two able sermons on the Doctrine of Reconciliation, which were subsequently reprinted in this country.



His meeting house was on Essex street, a few rods above Washington street, on the northern side, where the Treadwell building now is. He came to Salem with a great reputation for learning, eloquence and piety, and was able at the very outset to persuade the society to adopt a new and strange form of church government, allied with the Presbyterian, one of the peculiarities of which was, that no church act could be executed without his consent. This made him actual dictator of the church. And having once mounted the saddle he was a skilful rider. He also beguiled them "with fair words and goodly speeches," as they afterwards themselves declared, into a novel mode of installation. No clergy assisted on the occasion, but what little ceremony was performed, was done by Timo. Pickering, jr., who read the society's letter of invitation, to which the Dr. gave his own reply. The neighboring clergy protested against this innovation, but the popularity of the new minister was a shield against all assaults. His society increased and flourished, and became the largest in town—probably larger in numbers than any at present in this place.

But although Dr. Whittaker thus came in on the top wave of popularity, he remained to witness an ebb of the tide; even more than this, to see the tide *all out*, and himself high and dry on the flats. His society, the largest in town when he came, was the smallest when he left. It was found that his character, at first esteemed so pure and godly, had in it a dash of "the world, the flesh and the devil." He soon entered upon the cares of the temporal as well as of the spiritual kingdom. He became an active man in the worldly concerns of the town, and busied himself generally about so many matters that he damaged his standing as a minister. This was particularly so when rumors affecting his moral character began to gain credence.—His old friends then turned against him and deserted him, and Timothy Pickering, jr., who had been his right hand man, dealt him some left hand blows which were more than he could take and live.

In 1774, a portion of his society withdrew, and were subsequently organized as the present South church. In October of the same year, the meeting house was destroyed by "the Great Fire." But still undaunted, by a herculean effort, Dr. Whittaker raised the means, from Presbyterians in various places, to erect a new house, the late Tabernacle, which he named after his friend Whitefield's Tabernacle in London, of which it was a copy. The conditions of subscription to the building were, that "the Rev. Dr. N. W., shall be the founder of said Tabernacle and proprietor of the lands, \* \* \* \*

which shall be disposed of, by Dr. W.'s last will and testament, unto his successor in the ministry, \* \* \* he and they being orthodox in the faith of the Gospel, and in Church Government, agreeable to the Westminster Confession of Faith, Catechisms, and Directory of the Church of Scotland, as practiced by the Presbyterians in New England, and to the Southward in America," etc.

While the Tabernacle was building, the war of the Revolution came on. Dr. Whittaker entered into this with all his heart.—He did not hesitate to "preach politics," in the most direct and pungent style. He urged on the cause in the most ardent manner. This delighted the whigs and exasperated the tories. At the commencement of hostilities he preached a famous sermon from the following text :

"Curse ye Meroz, said the angel of the Lord; curse ye bitterly the inhabitants thereof, because they came not to the help of the Lord, to the help of the Lord against the mighty."

The belligerent Doctor applied this curse to the tories, and from the fulness of his heart did "curse them bitterly." At the close of the war he preached a companion to this sermon, and the two were published and dedicated to Gen. George Washington, under the title of "An Antidote against and the Reward of Toryism." A second edition was published in 1811, by Pool & Palfrey, at the Register office.

Besides preaching, Dr. Whittaker also *practiced* in favor of the Revolution, by entering into the privateering business, in which it is said he was pretty fortunate, and frequently "turned an honest penny." He also engaged in the manufacture of saltpetre.

In October, 1775, Dr. Whittaker petitioned the town for leave to inclose "such a part of the common as the town shall judge best, not exceeding one acre and a half, in order to erect works for making *saltpetre*, and to grant him a right to improve the same for said use, so long as he or his shall carry on that manufacture;" but his request was not granted. In May, 1776, he applied to the town for further favors in the line of his experiments, as follows :

"The memorial of Nathaniel Whittaker humbly sheweth, That your memorialist has been at great charge to erect and carry on saltpetre works in this town and of making many experiments; and materials for making saltpetre now begin to fail, so that very little more can be made unless some new method of gathering Nitre can be found, and as he has discovered a method which he thinks will answer a good end, by collecting water from the streets after rain—Therefore your memorialist humbly prays that the town will grant him liberty to sink cisterns or some convenient receptacles of water which, in or after a rain, may run along in the streets in such way manner or situation as he shall find

most convenient, in or near about the following places (he not injuring the road, and keeping the said receptacles covered, and allowing any who would have received benefit to their land by the wash of the street in either of the places, if they will clear out said receptacles when empty of water, to take earth for manure, and also allowing the town to use the water in said receptacles in case of fire) viz : One place in the highway near Mr. James Cutler's; one in the street near Capt. George Osborne's; one to take the wash of the drain near Mr. Benj. Deland's; another place in the drain in the street below the court house, and another near Mr. Nathaniel Gould's shop; and that none may be allowed to turn the present natural course of the water which may run after a rain or set up any receptacles of water above those of your memorialist, so as to prevent the water in whole or in part, from coming to them, and that he may enjoy this privilege till the town shall see fit to alter it," &c.

This prayer the town granted, and Mr. Felt states that the works were set up near the head of the Turnpike. In his sermon against toryism, Dr. Whittaker mentions, that he was assisted in his saltpetre manufacture by several gentlemen who subscribed \$500 to aid the enterprise. There are records remaining of the sale of small quantities of saltpetre to the State, in 1776, by Dr. W. and others of Salem.

These active exertions of Dr. Whitaker, in behalf of the War, greatly exasperated the tories. Judge Samuel Curwen, a loyalist refugee in London, wrote home to a friend that Whittaker was "a notorious character in America, and not unknown here. \* \* \* He is usually called Dr. Meroz in America, from his usually applying the 23d verse of the 5th chapter of Judges to the poor refugees." And again, as "a mischievous incendiary, of a proud, restless, turbulent spirit."

At the close of the war, William Pynchon, a loyalist lawyer in Salem, who had temporized and conceded to the whigs rather than flee the country, wrote to Judge Curwen as follows :

"Since plundering and privateering have declined, the *reverend* Dr. Whittaker exerts himself on the wharves as well as in the desk against the return of Americans. \* \* \* Alcock *evasis et abdicavit* with bag and baggage, and Whittaker seems to be hastening after him. These two politicians seem to have been the authors and promoters of more mischief than it is possible that any two who are left behind them either could or would effect, or even attempt. They resembled Swift's committee of ways and means for continuing the war and promoting malevolence and contention as long as possible; but at length they became contemned and deserted by all, and I cannot recollect any better proof or assurance you can have than the fate of these two persons as to the temper of the people of this town, and as to their disposition for peace and benevolence." \* \* \* "Alcock's going off, (or absconding,) with Dr. Whittaker's sinking in the esteem of the people, even at the fish-market and brandy shops has produced a good effect."

These passages are chiefly tolerable as exhibiting the bitterness of feeling entertained by the loyalists toward Dr. Whittaker

as an advocate of the patriotic movement. They should be read with due allowance for the excitement under which Mr. Pynchon labored when writing upon this subject to his loyalist friend in London.

But these various activities finally involved Dr. W. in so many troubles, that in connection with the general persuasion of his moral turpitude, and his Presbyterian heresy, they proved his ruin. Indeed, reports of a very scandalous nature gained credence, and when he was called upon to clear them up by explanation to the church, he assumed a defiant tone and demanded a set investigation before a Presbytery. The number of attendants on his ministry diminished with very significant rapidity, amounting to a general flight.

Finally, in February, 1784, an ex-parte council was called by the Church, which summarily deposed Dr. Whitaker from his pastoral office. The complaints laid before the council were that "Dr. W's ministerial walk had been, and still was, irregular; his deportment overbearing and tyrannical; his moral character very suspicious, and his adherence to the Presbyterian form of government obstinately tenacious." These charges were virtually endorsed by the Council, and the Doctor dismissed in disgrace. He on his part vehemently denied the accusations brought against him, and challenged his opponents to institute a legal investigation of them before a Presbytery which was to assemble at Groton. But the church did not think it worth while to pursue the matter in this direction.

The Doctor published an elaborate pamphlet soon after his dismissal, entitled "A Brief History of the Settlement of the Third Church in Salem, in 1769: and also of the Usurpation and Tyranny of an Ecclesiastical Council in 1784." He denounced the charges against him as calumnious and libelous, and said:—

"I really believe, and on good grounds, that had I preached smooth things; promised heaven to works of natural men; been delicate and modest in reproving the fashionable vices of the times: In a word, if I had studied and preached people's tempers more, and my Bible less, and conformed to the Congregational mode of government, and asked nothing for my services, I should have been, this hour, as quiet, reputable, and esteemed in the world, at least, as common; and the crimes charged on me would not have been mentioned."

When the Presbytery assembled in Groton,—he being President and the guiding spirit thereof,—the case of his dismissal was taken up, and the Doctor fully justified; and ultimately the same body recommended him as a worthy minister and much abused man. There soon appeared in Salem a pamphlet entitled "The Mutual Care the Members of Christ's Body

owe to each other : A Sermon, preached at the opening of the reverend Presbytery of Salem, at Groton, June 9, 1784. By Nathaniel Whitaker, D. D. Together with the Minutes of the said Presbytery in his Case ; a short plan of Presbyterian Church-Government ; with an Appendix, by the same author ; containing a Display of the Sophistry, Misrepresentations and glaring Falsehoods published in a late Pamphlet, entitled, ' Dr. Whitaker's neighbor is come and searcheth him out,—or a Defence of the late Council's Result.' A Lying Tongue is but for a Moment. *Solomon.*"

After Dr. Whitaker's dismissal, he remained in town for a time, but never again preached here. He left Salem and obtained charge of a small Society in Canaan, in Maine, but while there had the further misfortune to be called to account before the Supreme Court upon a criminal charge, of which however he was cleared through the lack of sufficient evidence to convict him. From Canaan he went to Virginia, and practiced medicine, for which he had some aptitude, as appeared at the time of the prevalence of the small-pox in Salem, in 1774. He died January 21, 1795, aged 63 years.

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**WILLIAM MCGILCHRIST OF THE EPISCOPAL CHURCH.** Mr. McGilchrist was the second Rector of the Episcopal church, succeeding Mr. Brockwell in that office. He was appointed in 1746, by the "society [in England] for the Propagation of the Gospel in Foreign Parts," in accordance with an earnest petition of the society here, which ran as follows :

"To his Grace, the most Revd. Father in God, John, Lord Archbishop of Canterbury, President, and to the rest of the Right Reverend Right Hon'l and Worthy Governors and Members of the Society for the Propagation of ye Gospel in Foreign Parts :

Gent.—The Removal of the Rev'd Mr. Brockwell, the Society's Missionary in this Town, by ye Bishop of London to the King's Chapel in Boston, in the Room of Mr. Roe, makes us once more petitioners to the Hon'l Society, That they will be pleased to appoint some suitable Gen't for this Church. We doubt not but that you have had a satisfactory acc't from Mr. Brockwell of the state of our Church, as also the great expense we have been at in raising and finishing a house suitable for ye Worship of ye Supreme Being. When we say great expense it is so indeed considering the small number engaged in the affair, and have at last compleated ye same, and as this town is the Shire Town of the County and ye next markett Town to Boston in New England, you cannot but conclude, our opposition has been great (having what ye world calls great men, our antagonists.) But thanks to Heaven they

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have at last great reason to applaud our system (and we hope ere long they will join with us in the Established Form.) They having had monstrous Divisions in most of their Society's, occasioned by Mr. Whitefield and his successors, which has opened ye Eyes of some so as to behold ye Beauty of our Church which hitherto has escaped the snares laid by the Grand Deceiver of mankind. We therefore hope that you will, as soon as may be, send us a man who by his parts and prudence will be able to still all opposers, and by the soundness of his Doctrine convince all gainsayers, and lastly by his exemplary life do honor to the Religion he professes. And as we are the Second Town in N. E. you cannot but think the expenses of a Family are greater, than at Scituate, Kingston, &c., where their stipend is greater. Indeed we know where those Missionaries spend six-pence, a Clergyman in this Town must unavoidably spend eighteen pence, unless he breaks through all the Rules of Common Decency and good manners. Therefore we hope the Hon'l Society will take ye matter under consideration and add the Twenty pounds to the Forty, which was taken off from Mr. Brockwell, to ye next Gent. yt. comes, so that with the one hundred and thirty pounds we will give him it will afford him an comfortable and handsome living, so that he may devote the whole of his time to his Study, not being perplexed in his mind (by the narrowness of his income) how he shall live. As to Mr. Brockwell, to be sure he has been faithful to the trust reposed in him, and as in the course of things he must leave us, we committ our case to you, not doubting your regard for this Infant, tho' flourishing Church, as it is the design of the Society to Propagate the Gospel in Foreign Parts.

We salute you and are, your humble supplicants and most humble servants,

PHILIP SANDERS,	}	Wardens.
JNO. DAMPNEY,		
B. GERRISH,	}	Vestry.
DAVID BRITTON,		
WM. HATHORNE,		
EPHRAIM INGALLS,		

P. S. Gen'n:—If you will be pleased to send us some Common Prayer Books with Tate and Brady's Version Psalms, they will be of great service."

The person appointed in answer to this prayer was a native of Glasgow, Scotland; born in 1703; graduated at Baliol College, Oxford, in 1731; ordained a deacon, by Richard, Bishop of London, in 1733, and a priest by Martin, Bishop of Gloucester, in 1735. His first ministerial service was rendered at St. Philip's Church, Charleston, S. C., from 1741 to 1744, as a Missionary of the Society for the Propagation of the Gospel in Foreign Parts. He resigned that charge on account of ill health, and returned to England with testimonials of his usefulness, and high character.

The Society above mentioned had contributed to the support of the church here from the beginning. Mr. McGilchrist served its interests with great success. The congregation here grew rapidly under his charge, so that it was necessary in 1771 to enlarge the house and engage an assistant minister, the

Rev. R. B. Nicholls. But when the Revolution came on the prosperity of the church received a disastrous check. The Episcopal clergymen throughout the country were suspected of Toryism, because they declined to omit the prayers for the royal authorities. Indeed, Dr. Parker, of Boston, and Mr. McGilchrist, were the only two Episcopal clergymen who did not fly from their parishes, to England, or other colonies, when the war broke out. The church in Salem dwindled away, and public worship was finally suspended. • Mr. McGilchrist was exposed to various trials and troubles during the war, so excited was the popular feeling. The church edifice itself was assailed.—Stones were sometimes thrown into the windows while worshippers were assembled. The boys used to “go and rock the tory church” as a diversion.

Mr. McGilchrist died in Salem, before the close of the war, April 19, 1780, in the 78th year of his age and 34th of his ministry here. Judge Samuel Curwen, who knew him well, speaks of him in his Journal as a person of “singular integrity of character, undissembled virtue, and a friendly heart.” Dr. E. A. Holyoke, his intimate friend and executor, wrote, that “he was esteemed by all who were really acquainted with his character as a gentleman of learning, integrity, charity, virtue, and purity.”

By his will Mr. McGilchrist bequeathed the amount of salary due him from the Society for Propagating the Gospel, and also his share of “the contribution for the unhappy sufferers in America” unto the Worthy Society. He manumitted his negro-servant Flora, gave his books to his successors in the ministry, and the balance of his estate to Dr. Holyoke.

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ROBERT BOUCHER NICHOLS. He was connected with the Episcopal Church as an assistant minister from 1771 until December, 1774, when, being a royalist, he fled to Halifax.—He was employed in Salem by subscription, forty-seven persons agreeing to give certain sums per week, varying from *four-pence to one shilling*, to compensate him. But little is known of him. He is spoken of by tradition as “an eloquent and popular preacher.” He was a native of the West Indies.—After his flight from Salem, he served as Chaplain in the British Army. Subsequently he was Dean of Middleham, in England. In 1787, he addressed an eloquent letter against Slavery and the Slave Trade to the Committee for the suppression of the Slave Trade (Granville Sharpe, chairman) of which several editions were published in London.

**THOMAS BARNARD, JR., OF THE NORTH CHURCH.** Dr. Barnard is yet well remembered by our elderly citizens. He was a son of the pastor of the First Church, born in Newbury, February 5, 1748. He graduated at Harvard College in 1766, and studied theology with Dr. Williams, of Bradford,—afterwards Prof. Williams of H. C. In 1794 he received the title of D. D. from the universities of Edinburgh and Providence. He was descended from a ministerial family. His father, uncle, grand-father, and great grand-father had all been preachers. His ancestor, Francis Barnard, came over and settled in Hadley. Francis had a son Thomas, who settled in the ministry at Andover. The latter had a son John, who succeeded him in his parish. John had two sons, one of whom, Edward, settled over a society in Haverhill, and the other, Thomas, over a society in Newbury and subsequently in Salem—as mentioned in a previous notice of him—and was father of the subject of the present record.

The North Church was formed in 1772, by an amicable secession of a minority of members of the First Church who had desired to settle Mr. Barnard as colleague with his father, instead of Mr. Dunbar, and who preferred to enjoy his services. The meeting-house, still standing, corner of North and Lynde streets, and used as a carpet factory, was built the same year.

Mr. Barnard was more eminent as a pastor than as a preacher. His shining qualities were of the heart rather than the head; yet his published discourses impart a favorable impression of his pulpit efforts. The following are preserved in the Athenæum and Institute Library:

Sermon at the Ordination of Aaron Bancroft, in Worcester, Feb. 1, 1786; Sermon before the Annual Convention of Congregational Ministers in Boston, May 30, 1793; Discourse before the Mass. Humane Society, at second annual meeting, June 19, 1794; Thanksgiving Sermon, Feb. 19, 1795; Fast Day Sermon, March 31, 1796; Thanksgiving Sermon, Dec. 15, 1796; Sermon on the death of Washington, 1799, published by desire of the Town at the Bible and Heart Bookstore; Sermon before Salem Female Charitable Society, July 6, 1808; Charge at Installation of J. S. Popkin, in Newbury, Sept. 19, 1804; Discourse before Society for Propagating the Gospel among the Indians, Nov. 6, 1806; Sermon at Ordination of Ichabod Nichols, in Portland, June 7, 1809.

At one time, just previous to the Revolution, Dr. Barnard, was suspected of Toryism. He was an Addresser of Gov. Hutchinson. But he published an ample apology, and was



ever afterwards esteemed a fast friend of the country. At the time of Col. Leslie's Invasion, he was present at North Bridge, and by his judicious counsels aided largely in averting a bloody issue of the day's proceedings.

He is remembered as an elderly and venerable man, of benignant countenance, of small stature and portly figure, frequenting our streets under cover of a snug cocked-hat, with small clothes and silver buckles, after the fashion of his younger years; an amiable, pleasant, and kindly man, who caressed the children in the street, and bestowed a friendly smile upon all whom he met. He was cheerful, social, affable, and generous, a true man, esteemed by all who could appreciate what is noblest and best in human nature. He died Oct. 1, 1814, aged 67 years.

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On the conclusion of this memorial of olden times, the Hon. C. W. Upham expressed the pleasure he had enjoyed in listening to the evening's entertainment, and narrated several anecdotes relating to the subject which engaged the attention of the meeting.

Some conversational remarks incident to the matter then followed, when the Institute adjourned, after having passed an unanimous vote of thanks to Mr. Streeter, for his paper.

### *Friday, March 27, 1857.*

Evening meeting at half past seven o'clock, the Vice President, Rev John L. Russell, in the chair.

Records of preceding meeting were read. Letters from correspondents were read.

Donations to the library from William Brown, James Emerton, and from the Massachusetts Legislature, were announced.

Donations to the cabinets from Edwin Upton, were noticed. A few early flowers, among them blossoms of *Hepatica triloba*, found in the Great Pasture by Mr G. L. Streeter, were the subject of some remarks from the chair.

The following, being read by its title, was presented to the meeting, viz :

SOME NOTES on the CRYPTOGAMIC VEGETATION of Fayal, Azores, &c., by JOHN L. RUSSELL.

My esteemed friend, Rev. Thomas W. Higginson, having spent the winter at Fayal, was so kind as to gather for me some of the cryptogamic plants, principally the lichens and mosses. Collecting whatever occurred to him in his walks, and marking each package of specimens with careful notes, which designated the locality or the elevation above sea level of the species, the suite, though necessarily not altogether in fruit bearing conditions, yet was a valuable one.

As it might be supposed, on the rocks exposed to the sea, were forms of lichens similar to our own maritime kinds ; but, as the elevated spots were visited, quite other forms succeeded. With such works as are at my disposal, I have not been able to identify all of these ; the mosses however having been submitted to the inspection of T. P. James, Esq. for confirmation of my own decisions, I here insert the list, imperfect I am well aware, but of some passing importance ; and in the hopes that future visitors may be led to examine and bring to light this interesting branch of the Azorean flora.

LICHENES. *Gymnocarpi.*

§ PARMELIACEÆ.

1. *Usnea barbata*, variety *hirta*. *Fries.*
2. *Evernia flavicans*. *Swartz.* Wall near the "Misterio," Fayal, rare.
3. *Ramalina scopulorum*. *Acharius.* Monte de Guia.
4. *R. farinacea*. *Auctt.*
5. *R. pollinaria*. *Fr.*
6. *Roccella tinctoria*. *Ach.*
7. *Rocc*: sp: *Mirante Ravine.*
8. *Cetraria cucullata*. *Ach.* Monte de Guia.
9. *Sticta aurata*. *Delisle.* Crater of Monte Carniero.
10. *St*: *damæcornis*.<sup>\*</sup> *Ach.* Pico.
11. *St*: *pulmonacea*. *Ach.*
12. *St*: sp. Monte Carniero.
13. *Parmelia perforata*. *Ach.* Caldieras.
14. " *perlata*. *Ach.*
15. " *saxatilis*. *Ach.*, or resembling it. Monte de Guia and summit of Monte Carniero.
16. *P. caperata*. *Ach.* Espalamarca.

17. *P. parietina*. *Dufour*. On high cliffs S. W. side of Fayal in profusion; also on ruined walls; and on twigs of pomegranate.

18. *P. ciliaris*. *Ach.* Variety *angustata*.

19. *P. pulverulenta*, (Wallroth) accompanying *P. parietina*.

20. *P. speciosa*, variety *galactophylla*. (*Tuckerman*.)

21. *P. astroidea*. *Fr.*

22. *P. stellaris*, (*Wallr.*) Variety *hispida*. On twigs of pomegranate.

23. *P. stellaris*, variety *tenella*, *Ach.* On lava.

24. *P. sp.*; reminding me of *P. (Pannaria) Gayana*.—Compare *Montagne Sylloge Pl. Crypt.* page 330, but the apothecia are young and imperfect and the specimens are small. Summit of Monte Carniero.

25. *P. cartaliginea*, *Fr.* On exposed rocks.

26. *P. elegans*, *Ach.* Espalamarca: also on Sea Wall.

27. *P. rubræ affinis*, *Ach.* On trees in the Crater of Monte Carniero, at the elevation of 900 feet.

28. *P. cerina*, *Hedwig*. On twigs of *Morus multicaulis*.

#### § LECIDINÆ.

29. *Stereocaulon denudatum*, variety *digitatum*, *Fr.* Pico, at an elevation of 7600 feet.

30. *Stereocaulon condensatum*, and

31. *Ster. nanum*. From a *Misterio*, a wild region extending over many miles at the north end of the island, being the track of the last eruption, (A. D. 1672) proceeding from the Pico de Fogo in two directions toward the sea. The black rocks are entirely covered with gray, crisp lichen, a few other species, which I send, being sparingly intermixed. In sheltered spots, mosses and ferns are beginning to show themselves, and fig trees and other bushes sometimes occur; but the prevailing aspect is of a grey hoar-frost—or sometimes in the sunlight like a hillside covered with mountain laurel (*Kalmia latifolia*). It is always marked by a definite line from the green country each side. The stone walls which intersect it here and there, built of the same lava rock, and whose age I could not learn, are covered equally densely with the same growth, showing it to be comparatively recent. Such a region is called by the Portuguese a *Misterio* or Mystery.

32. *Cladonia turgida*? (thalline scales.)

33. " *fimbriata*. *Fr.* Monte Carniero. The only cup-bearing moss (lichen) I have seen.

34. *Cladonia furcata*\* *pungens*? *Fr.* Very small and delicate form.

35. *Cladonia squamosa* \* \* *delicata*, *Fr.*  
 36. " *rangiferina*, b. *sylvatica*. *Pico.*  
 37. *Biatora rosella* (small form.) On a juniper tree in the garden of Mr Dabney.  
 38. *Biatora* sp: with orange colored apothecia.  
 39. *Lecidea* sp. (*L. mammillari affinis.*) *Fr.* High Cliffs.  
 40. *Lecidea speirea*? *Ach.* On rocks.  
 41. " *enteroleuca*. On locust trees in the garden of Mr Dabney.  
 42. *Lecidea* sp: On beech trees.  
 43. *Opegrapha* sp: on stems of *Cactus triangularis* in gardens.
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### (*Angiocarpi*)

44. *Pertusaria communis*. (*Variolaria amara*, *Ach.*) Monte de Guia. Crumbling Cliffs; also on lava on the north side of Fayal.
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45. *Lepraria*. *Pico.*
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### HEPATICÆ.

46. *Marchantia* sp: with fragrant fronds.  
 47. *Preissia commutata*. *Nees.*  
 48. *Frullania tamarisci*. *Nees.* On bushes of "Fayal Myrtle."  
 49. *Frullania Virginica*, *Lehm.*  
 50. *Madotheca platyphylla*, *Dumort.*
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### ALGÆ.

51. *Stigonema minutum*, *Hassal.* Among isidioid crustaceous lichens, on Monte de Guia.

### MUSCI.

#### *Acrocarpi.*

52. *Andræa rupestris*. *Turner.* Summit of Pico.  
 53. *Sphagnum acutifolium*. *Ehrhart.*  
 54. *Sph. cymbifolium*. *Dillenius.*  
 55. *Gymnostomum tortile*. *Hooker and T aylor.*

56. *Orthotrichum diaphanum*. *Schrader*. On a willow tree.  
 57. *Ptychomitrium polyphyllum*. *Bruch and Schimpfer*.  
 58. *Grimmia* sp. *Ehrt*.  
 59. *Racomitrium lanuginosum*. *Bridel*. Pico.  
 60. *Mielichhoferia* (*Montagne*.) sp.  
 61. *Polytrichum piliferum*. *Schreber*. Summit of Pico.  
 62. *Leucobryum glaucum*. *Hampe*. Crater of Caldieras at 6000 feet height.  
 63. *Fissidens osmundioides*. *Hedwig*. Crater of Caldieras.  
 64. *Campylopus brevipilis*? *Bruch and Schimpfer*.  
 65. *Campyl: setifolius*? *Hooker and Wilson*.  
 66. *Tortula marginata*. *B. and Sch.* Mirante Ravine.  
 67. *T. muralis*. *Timm*. Garden walls  
 68. *T. ruralis* and variety. *Hedwig*. Garden walls.  
 69. *T. unguiculata*. *Hedw.* Pico.  
 70. *Cynodontium Bruntoni*. *Bruch and Schimpfer*.  
 71. *Bartramia calcarea*. *Bruch and Schimpfer*.  
 72. *Bart. rigida*. *Bals. and Notaris*.  
 73. *Bryum Billiardii*. *Schwaegr.*  
 74. *Bry. capillare*? *Hedwig*.  
 75. *Bry. bimum*. *Schreber*.

#### PLEUROCARPI.

76. *Leucodon lagurus*. *Hooker*. On twigs of Fayal Myrtle.  
 77. *Leucodon sciurioides*. *Schwaegr.*  
 78. *Hypnum hians*. *Hedw.* Crater of Caldieras.  
 79. " *prælongum*, *Dillenius*.  
 80. " sp: near to *H. serrulatum*. *Turner*.  
 81. " *rutabulum*? *Dill.*  
 82. " *Muhlenbeckii*, *Bridel*.  
 83. " *cupressiforme* variety *filiforme*. *Dill.*

#### LYCOPODIACEÆ.

84. *Selaginella denticulata*. *Link.*

The habits of fishes, alluding more particularly to their senses, as those of taste and of sight; also to their food and

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modes of taking it; beside some remarks on the artificial propagation of fresh water kinds, particularly the trout (*Salmo fontinalis*), were made the topic of some valuable and interesting remarks by Capt. Nathaniel E. Atwood, of Provincetown, he being present by invitation and having consented to address the meeting.

On motion of John H. Stone, it was unanimously

Voted, That the thanks of the Essex Institute be presented to Capt. Atwood for the instructive and interesting lecture, with which he has favored us this evening.

After which it was voted to adjourn.

*Friday, April 10, 1857.*

Meeting this evening at half past seven o'clock. Rev. J. L. Russell in the chair.

Records of preceding meeting read.

Donations to the Library announced, from L. A. H. Latour, of Montreal, C. E.; J. Linton Waters, of Chicago, Ill.; James Kimball; George Higginson, of Boston; H. M. Brooks, James Manning; Samuel G. Drake, of Boston; Messrs. Hickling, Swan and Brewer, of Boston.

Donations to the Cabinets from Edwin Upton, S. B. Buttrick, James Manning, J. H. Leavitt, H. F. Shepard, John Hays, George A. Perkins, Moses Farmer, M. G. Tenney.

Letters were read from John L. Hickcox of the New York State Library, Trustees of Boston Public Library.

The chair offered some interesting remarks upon the natural history of the *Draba verna*; specimens of which, in flower, were on the table. They were collected by Mr. Streeter, a few days previous, near the Emerson farm in South Danvers, near Tapley's Brook. This little plant is the first harbinger of our spring in Essex County. It opens its tiny spike of whitish blossoms, before any other vernal bud dares to unfold itself in the warm sun's rays. On an almost bare rock, in company with a dull green moss (*Bartramia fontana*) and a few

starved saxifrages (*Saxifraga Virginiensis*) over which the waters of the melting snow trickle, and thus bathed in icy coldness, it renders itself conspicuous by its numbers, and forms a thick sod or carpet of exquisite loveliness. Unfortunately its precise locality, specified above, seems, thus far known, to be its only habitat in our region; and attempts to transplant it elsewhere, or to find it in other parts of this vicinity have failed. It is hoped that it will be permitted to occupy its site for many years to come; and thus to mark one of the many interesting discoveries of our late President of the Essex County Natural History Society, the lamented and beloved Dr. ANDREW NICHOLS.

The Secretary announced to the meeting that the proprietors of the Salem Athenæum, at a meeting held April 4, 1857, had acceded to the proposals as amended by the Institute, as follows :—

The Proprietors of the Salem Athenæum agree—

1st. To allow the Essex Institute to use the rooms on the *lower floor* of PLUMMER HALL, for any purposes consistent with the terms of Miss Plummer's will.

2d. To allow the Essex Institute, after the Athenæum has been accommodated, sufficient space for their library on the *second floor*, together with such privileges in all the rooms on the same floor, as may be necessary for the care, delivery and consulting of their books.

3d. To allow members of the Essex Institute, who have paid all their dues to that body, to consult the books of the Athenæum Library :—

*Provided*, That the Essex Institute, at a legal meeting called for the special purpose of considering this subject, shall agree,—

1st. To pay to the Athenæum, annually, the sum of three hundred dollars.

2d. To allow the Proprietors of the Athenæum to consult the books of the Institute Library.

3d. To pay one half the expense of warming the building and keeping its approaches unobstructed.

4th. That two years' notice by either party may terminate this agreement.

The remainder of the evening was occupied by Dr. H. Wheatland, in giving a cursory sketch of the Social and Philosophical Libraries, which, in 1810, were purchased by the Salem Athenæum and formed the nucleus of their valuable and highly interesting collection of books in the arts, sciences and literature. In thus doing, a descriptive account of our ancient town a century since was given,—when Salem was a small provincial place, its principal trade being in the fisheries and with some of the West India Islands; the population somewhat sparse, yet contained many highly intelligent and influential persons. Allusion was made to a social evening club, which at that time existed, and which continued for many years afterwards; it was instituted for improvement in Literature and Philosophy, and enrolled among its members representatives of the several professions and occupations of its inhabitants. Among them may be mentioned Hon. Benjamin Lynde and Hon. Nathaniel Ropes, Judges of the Superior Court; Hon. Andrew Oliver, Judge of the Court of Common Pleas; William Pynchon, Esq., an eminent lawyer; Rev. William McGilchrist and Rev. Thomas Barnard; Stephen Higginson, Esq., a merchant of distinction; Hon. Wm. Browne, Judge of the Superior Court, and afterwards Governor of Bermuda; Col. Benjamin Pickman; Dr. E. A. Holyoke, who was then a young physician, but lived past a century, and exerted a great influence in moulding the institutions of this town and State, and others. These gentlemen possessed literary attainments of a high order, and though ardently attached to their country, took different views of its interests, during the Revolutionary era, which soon commenced—some leaving in consequence of a want of sympathy with the dominant party became loyalist refugees—others, embracing opposite views, became warm supporters of the cause, and took a prominent part in securing the independence of these United States.

The subject was probably suggested and discussed, at some



of the meetings of this club, of founding a library, similar, in many of its features, to those which had a few years previous been formed in Philadelphia, under the auspices of FRANKLIN; at Newport, by the generosity of Redwood, and at two or three other places.

The following call of a meeting is the first notice that we have on record :—

Whereas it has been proposed to set on foot subscriptions for founding and endowing in the town of Salem a handsome Library of valuable books, we, whose names are underwritten, apprehending the same may be of very considerable use and benefit under proper regulations, do hereby declare ourselves severally willing to afford our respective assistance; provided the terms of subscription shall be agreeable, to which end we agree and engage to meet at the house of Mrs. Hannah Prat, next Monday evening, being the last of this instant, at 6 o'clock, there to discuss and determine upon the properest and best methods of effecting so desirable a purpose.

B. PICKMAN,	EBEN PUTNAM,
ICH'D PLAISTED,	S. HIGGINSON,
THO'S BARNARD,	WM. PYNCHON,
S. CURWEN,	E. A. HOLYOKE,
NATH. ROPES,	W. WALTER.
TIMO. ORNE,	

The meeting was held at Mrs. Prat's; a public house, on the corner of Essex and Washington streets, where the store of Messrs. Ives & Smith is now situated. The following subscription paper was then drawn up and signed :—

SALEM, March 31, 1760.

We, the subscribers, sensible of the publick advantage of having a well chosen Library in this Town, agree to form ourselves into a society for that purpose, and hereby promise to pay to Stephen Higginson, Esq., the sums set against our names respectively, either in Cash, Bills of Exchange or Books, agreeable to the Society at the sterling Cost and charges, the money and Bills to be laid out in Books in London conformably to a list agreed on by the Society. The whole to remain deposited forever in some Room in this Town provided by the Society for this purpose, to the sole use of ourselves, Heirs or Assigns, in the manner following, viz: That each five guineas shall entitle the subscriber to be or to make one Proprietor and member and also to

one vote. And all further regulations we defer to the determination of the Society hereafter.

Benj. Pickman,	Twenty guineas,	William Browne,	five guineas,
Timothy Orne,	ten "	W. Walter,	five more,
S. Curwen,	ten "	Joseph Blaney,	five guineas.
Stephen Higginson,	five "	Jas Jeffry for Wm. Jeffry,	five "
Ebenezer Putnam,	five "	Richard Derby,	five "
Joseph Bowditch,	five "	Daniel King,	five "
Samuel Barnard,	five "	Samuel Gardner jr.,	five "
Nathaniel Ropes,	five "	Thomas Barnard,	five "
E. A. Holyoke,	five "	Samuel Gardner,	five "
W. Walter,	five "	Benja. Pickman jr.,	five "
William Pyncheon,	five "	Francis Cabot,	five "
William Vans,	five "	Joseph Cabot,	five "
John Nutting jr.,	five "	William Eppes,	five "
Samuel Barton jr.,	five "	A. Oliver jr.,	five "

Rev. Jeremiah Condly, a Baptist clergyman of Boston, who was on the eve of visiting England, was appointed an agent for the purchase of books. The following directions were given to him for this purpose:—

*Directions to Mr. Condly in purchasing the Books for the Library in Salem.*

1. That you have herewith delivered you two catalogues, that marked No. 1, contains the books you are to purchase, that marked No. 2, contains the books already here in the hands of the members.

2. That you purchase, of the books to be procured, as many as may be at second hand, provided you can obtain them proportionably cheaper.

3. That if when in England you meet with any books not specified in either of the catalogues, which in your judgment you may apprehend will be agreeable to the members and worthy to have a place in the said library, you have liberty to purchase them to the amount of ten guineas.

4. That where octavo editions are to be had you purchase them rather than folios and quartos.

5. That if any of the controversy inserted in these catalogues there occur to you any answers of good repute, you are desired to purchase them.

6. That no books be delivered us unbound.

7. That the Tragedies be bound up by themselves in convenient volumes, as likewise the Comedies by themselves and also the Farces.

8. That on the arrival of the books at Boston you deliver them to Stephen Higginson, Esq., or order, on account of the members, as soon as they can be conveniently sent, at the rate of 12½ old tenor for one shilling, he paying you cash at the time of delivery.

An invoice of the books, dated London, 19th Dec'r, 1760, was shipped by J. Richardson, on board the Hawke, Capt. Newton, being at the account and risque of Mr. J. Cond'y.

The number of distinct books 182, contained in 415 vols.—cost £104 5 1 sterling.

The books arrived at Salem in the early part of the year 1761, and on the 20th of May of that year the first meeting of the subscribers was held. Hon. Benjamin Pickman, moderator—Nathan Goodale, clerk. The account exhibited by Stephen Higginson, Esq., of the cost of the books, the charges thereon, together with the cost of account books, expenses of the committee at Mrs. Pratt's and the cost of forms and boxes be hereby accepted, approved and allowed, and the said account is hereby directed to be recorded and each member's account charged with his proportion of the whole amount.

From the above account the following items may be specified:—

Cost of books from Mr. Cond'y.....	£172	7	¼	lawful.
“ “ from Proprietors.....	61	17	00	
Other expenses.....	11	10	5	
	<hr/>			
	£245	14	5¼	

This amount, divided by 32, number of shares,  
makes the price of a share,..... £7 13 7 lawful.

The number of volumes at the opening of the Library—

Purchased of Mr. Cond'y.....	415
“ Proprietors.....	124
	<hr/>
	539

The Library was first deposited in the brick school house in School street, and there continued till 1786, when it was removed to the new middle school house, until 1842 the centre school house in Washington street; the brick school house was taken down to erect on or near its site the court house, and this last building was also taken down in 1839 for the accommoda-

tion of the Eastern Railroad Company. The library was afterwards removed to the Central Building, Central street, where it continued till the formation of the Athenæum.

From the year 1775 to 1784 no meetings were held, and the interest which was before manifested in the success of the library was paralysed by the unsettled state of the country during the Revolution. At the restoration of peace, the attention of the proprietors was again directed to the state of the library; all fines, forfeitures, &c., that had been incurred during the abovementioned period, were cancelled, and it was determined to begin anew; a fresh impulse, thus imparted, rendered its further progress successful. In 1797, an act of incorporation was obtained. In 1809 a catalogue was printed.

The same causes, which for several years paralysed the progress of the Social Library, were instrumental in calling into existence another Library of great value to the scientific gentlemen in this vicinity. Early in the year 1781, the vessel, on board of which a part of the Library of the celebrated Dr. Richard Kirwan was shipped for transportation across the Irish channel, was captured by an American privateer. These books were brought into Beverly and sold. A company of gentlemen, consisting of Rev. M. Cutler, LL.D., of Hamilton; Rev. J. Willard, D.D., LL.D., and Joshua Fisher, M.D., of Beverly; Rev. T. Barnard, D.D., Rev. John Prince, LL.D., E. A. Holyoke, M.D., LL.D., &c.,—became the purchasers, and thus was laid the foundation of the PHILOSOPHICAL LIBRARY. An offer of remuneration was afterwards made to Dr. Kirwan, who generously declined it, expressing his satisfaction that his valuable library had found so useful a destination.

The books were kept in the librarian's house. Rev. Joseph Willard was the first librarian, until his removal to Cambridge, to enter upon the duties of the Presidency of Harvard University, when Rev. J. Prince was appointed to succeed him, and continued in office until the formation of the Athenæum.

The SALEM ATHENÆUM was incorporated in March, 1810. Notice for a call of the first meeting was signed by E. A. Holyoke, William Orne, Nathaniel Silsbee and Samuel Put-

nam, to be held on Wednesday, April 11, 1810, at 3 P. M

The meeting was accordingly held,—E. A. Holyoke being chosen moderator, and John Pickering, clerk. It was voted, that a value of the share be \$100, and that the annual assessment shall never exceed ten dollars, to consist permanently of a reading room and a library, which shall circulate among the proprietors in such manner and under such conditions as the by-laws may determine;—it was also voted, to purchase the “Philosophical Library” and the “Social Library,” at fifty dollars per share; and a committee was appointed and authorized to bargain for the same accordingly.

Arrangements were satisfactorily made for purchasing the above Libraries. On the 7th May, 1810, the Trustees leased two rooms in Central Building, on Market (now Central) street, for a term of five years,—and the rooms were opened on Wednesday, 11th of July, 1810. In April, 1815, the library was removed to rooms in Essex Place—in 1825, again removed to the rooms over the Salem Bank—and in 1841, to Lawrence Place,—and now they are being deposited in Plummer Hall, which I trust will be the final resting place for this valuable collection of Books,—built by funds left for the purpose of erecting an elegant and safe building of brick or stone, by the late Miss Caroline Plummer.

The present number of volumes is about 11,000—they have principally been obtained by moneys arising from the sale of shares and the annual assessments—although many valuable works have been received as donations from the friends of the Institution.

Some idea of the value of the Philosophical Library may be formed, by running over the following list of books, which it contained. This catalogue is worthy of preservation in our pages, as indicating the tastes and studies of its founders.

Boyles, R. Works, 5 vols. folio.

Harris' Lexicon technicum, 2 vols. folio.

Philosophical Transactions (abridgement) 10 vols. 4to.

“ “ at large, vols 47 to 70, 28 vols. 4to.

Memoires de l'Academie Royale des Sciences, depuis 1661—1699.  
14 vols. 4to.

ESSEX INST. PROCEED. VOL. ii. 19.

Histoire de l'Academie Royale des Sciences. 1699—1761. 63 vols. 4to.  
 Miscellanea Berolinensis, 7 vols. 4to.  
 Buffon, Histoire Naturelle, 15 vols. 4to.  
 Ames Art of Printing, 1 vol. 4to.  
 Johannis Bernouilli Opera, 4 vols. 4to.  
 Jacobi Bernouilli Opera, 5 vols. 4to.  
 Newton's Principia, 4 vols. 4to.  
 Traite des Sections Coniques, 1 vol. 4to.  
 MacLaurins Fluxions, 1 vol. 4to.  
 Smith's Optics, 1 vol. 4to.  
 Priestley's Optics, 1 vol. 4to.  
 Franklin's Electricity, 1 vol. 4to.  
 Sprat's History of the Royal Society, 1 vol. 4to.  
 Encyclopedia Britannica, 20 vols. 4to.  
 Transactions Royal Society, Edinburg.  
 Fabricii Bibliotheca Græca, 10 vols. 4to.  
 Repertory of Arts and Manufactures.  
 Tilloch's Philosophical Magazine.  
 Pennant's British Zoology.

The lecturer, whose intimate knowledge of our antiquarian lore, rendered him eminently suitable to his subject, was listened to, with marked attention; and many expressions of gratification at his success was elicited from those present.

At the conclusion of these, the Institute adjourned.

*Friday, April 24, 1857.*

Evening meeting at half past seven o'clock. Rev. John L. Russell, Vice President, in the chair.

Records of preceding meeting read.

Donations to the Library announced, from Joseph Dana Weed, Albert Fearing of Boston, Benjamin F. Browne, Samuel M. Worcester, St. Louis Academy of Science, S. B. Ives.

Donations to the cabinets from John Phillips, Thomas Hunt, G. A. Perkins.

Letter from the Corresponding Secretary of the St. Louis Academy of Science was read.

The Chair announced several plants, which had been col-

lected by members in their rambles in the vicinity of the city, and made some remarks on their appearance as the harbingers of the already approaching vernal season. Of these, were tufts of Bluets, which by and by were to whiten with their presence, in innumerable multitudes, the rocky pasture-lands of the immediate vicinity. On a sunny declivity and sheltered by some rocks, these exquisite little blossoms are yearly found, by persons acquainted with the spot, some weeks earlier than elsewhere ; and thus, one of the most premature of our blossoms in spring, it also may be found lingering among the last flowers of autumn, as if to unite by an encircling bond of loveliness the periodical garland of Flora. Thus the pretty little bluets seem to hold a similar place in our spring months to that of the gentians in our autumns, and, as the wet pastures and tuft bogs are gladdened by the deep blue-purple flowers of the gentians, so the dry warm hill sides are whitened by the pale blossoms of the bluets. Examined minutely, they lose none of their interest as delicate prettinesses ; and some people attach to them the name of Innocence.

In the first volume of the first series of the memoirs of the American Academy of Arts and Sciences, Boston, may be found what perhaps is the earliest paper of a strictly scientific character on our New England plants.

Rev. Dr. CUTLER, the writer of the paper, in briefly describing the Bluets, calls them Venus Pride, and arranges them under the Linnæan name of *Hedyotis*. Torrey & Gray after Hooker, calls them *Hedyotis cærulea*. In Bigelow's *Plants of Boston and Vicinity*, a most popular manual, especially with our earlier days, they are called *Houstonia cærulea*. See *2d and 3d Editions*. In Gray's *Manual of Botany* we find them called *Oldenlandia cærulea*, a name applied in 1703 by PLUMIER in honor of OLDENLAND, a German botanist. I make these remarks in passing, as illustrative of the acuteness of Cutler, considering the scanty materials at his disposal for consultation and comparison. Without considering which is the most correct, we shall probably continue to call our bluets *Houstonia*, as most familiar to our ears, though for the sake of

euphony, *Hedyotis* would be better, certainly even preferable to *Oldenlandia*.

The bluets grow readily on transplanting and even sow themselves spontaneously. A small seedling tuft grew and blossomed nearly two entire summers in the shade of some trees in my garden; and I am informed that they force well, if taken and potted in the autumn, blooming in the parlor very early. I have seen them do finely on artificial rockworks, insinuating their delicate roots into the interstices of the stones, while their humble size renders them well adapted to such garden cultivation. Perhaps too, improvements in colors and even in size could be secured by raising a succession of seedling plants, after a period of culture.

Another of the flowers, presented this evening, was the *Saxifraga Virginiensis* or Early Saxifrage. This pretty blossom is eagerly sought for, among the sunny rocks, as well known for its tendency to mark the advance of the May days, though its full spread cyme of flowers is not seen until later in the season. The Chair had a root brought to him a few years since, with double flowers, which though carefully, (perhaps too carefully) looked after, unfortunately perished. He mentioned the fact for the benefit of amateurs of our wild plants, and to induce them to be on the alert to detect any other instances, that might occur. The beauty of the plant was greatly enhanced by this sport of nature, and rendered the subject of it well worthy any garden.

Still another was the Bloodroot or *Sanguinaria Canadensis*, so early and so fugacious that it might be called the New England crocus, coming when the crocuses do in our gardens and not a whit inferior to them. This plant grows in profusion with the Dog's Tooth Violet, *Erythronium Americanum*, on the Forest River Road to Lynn, and elsewhere in several spots in the Great Pasture. In cultivation it readily produces seeds and sows itself; but as yet no very great improvement has been noticed; perhaps the size of the leaves or length of the petals are all. Could it be induced to grow double or multiplex in its flowers, we should have a gem indeed, to add to the



flower border. Time and cultivation may produce even this.

Some fungi, called puff balls, were laid on the table, which belonged to the genus of *Lycoperdon*. The Chair explained the internal structure in its cellular tissue, the mode in which its seed-like bodies were produced, the genesis or generation of its root-like threads (*mycelia*) from the spores and the dispersion of the ripened spores and their office in nature as well as in some of the employments in social life.

On the conclusion of these observations, the Institute was invited to the hearing of a Paper, presented by James J. H. Gregory, of Marblehead, on Indian Relics from that place, and likewise from South Hadley and Greenfield, in the vicinity of the Connecticut River, and elsewhere, as follows, viz :

The two localities in Massachusetts, where relics of the aborigines are found in the greatest number, are the immediate vicinity of the seashore, the alluvial meadows of the Connecticut River, and the gentle swells of land which rise from them. They are seldom met with in the hilly and mountainous districts. We therefore infer that those portions of the State where the masses of the population are now found were likewise favorite localities with the aborigines ; and it is often true that those places in a township where relics of the Indians are most numerous are also the favorite retreats of the refined excursionist of to-day ;—a coincidence which would seem to indicate that in the plan of creation the Creator united the greatest utility with the greatest beauty.

The collection of Relics on which these remarks are based, was made principally during the years 1849-50, when the meadows of Hadley, Hatfield, Sunderland and Deerfield were leisurely traversed on foot and calls made at nearly every house whose farm extended on the Great Meadows. Besides the above towns several excursions were made to neighboring towns, located in the more hilly regions ; and during the same period, and subsequently, the town of Marblehead, Mass., has been thoroughly perambulated, while a somewhat extended search has been made in the town of Ipswich, Mass.

It may not be out of place to remark, in passing, that one great motive which led me to carry out the plan of collecting these relics on a more extended scale than I at first designed, was, to preserve them from destruction or loss ; for at almost every farm house on the Great Meadows of the Connecticut

river, mention would be made of numerous relics, which they or their fathers before them had found, when this or that field was first broken up; which relics had since been either lost or destroyed, with the exception of such as had been occasionally given to some curious traveler. It seemed therefore to be a debt due to the Aborigines and to those intelligent persons of the present and future generations, who take an interest in the few remains of an ancient and departed people, to make as thorough a collection as was practicable, with the view of depositing it in some institution accessible to the public, where they might be forever safe from injury or loss by Vandal hands or unappreciative spirits. In our intercourse with the farmers we strove to afford such information as would lead them to attach some interest to relics of the ancient lords of their soil, and for the future preserve them from loss or destruction.

Of the relics of the Connecticut Valley, most of the implements and utensils which one would infer would be likely to be kept stationary,—such as the pestles, gouges, baking pots, hatchets and the like,—are found on the high swells of land within two miles of the banks of the Connecticut river; while the great proportion of the hoes and arrow points abound on the alluvial meadows bordering on the river. We therefore infer that the high lands were their favorite places for encampment and burial; while the river bottom was their favorite hunting ground and tillage land.

At frequent intervals along the drift-hills in the vicinity of this river are sand "dunes," or deposits of pure sand;—these dunes are fertile in relics. As the law of progress to which these deposits are subject is to advance onward in the direction towards which the prevailing wind blows, relics are often laid bare after high winds; and though these have been famous for relics from time immemorial, yet some of them still yield rich returns to the antiquarian. From the shifting character of these sands, it is obvious that a day will soon come when they will have yielded their last relic. Of these sandy knolls there is a large one located about two miles from Amherst, Mass., on the road to Hadley, which has proved exceedingly rich in relics; it is known as "Pine Hill," "Fort Hill," or "Indian Hill," and is situated a little to the left of the road, when one is going towards Hadley.

The finest relics found in the Connecticut Valley, judging from the specimens in our own collection and in several large ones that have come under our notice, were found in the town

of Granby, Mass. The lot was a superior one both in the design and execution, having in it some of those hollow cylinders and perforated double-edged "tomahawks," as they are sometimes called, which are so rarely found in the North. Evidences of the intercourse of the Indians with the whites are occasionally found, in the cannon balls and cooking utensils of iron, which are sometimes met with in close proximity with stone arrow-points and fragments of coarse pottery.

We have found several large fragments of coarse pottery—a variety of relic, from its perishable nature, exceedingly rare—on a low sand bar, located at a bend of the Connecticut river, on the road to Hockanum. This bar is bare at low water in summer, when it can be reached without much difficulty. The fragments found there, are probably washed from the Indian graves that are occasionally exposed by the encroachments of the river on its banks.

In the sand dunes, mentioned above, are occasionally found the skeletons of the aborigines. Some of these are complete even to the smallest bones of the extremities, and, but for their discoloration, might be wired as models. The condition of the teeth in the jaw, of an adult, found in one of these dunes, proves, assuming it to be that of an Indian, that the teeth of the aborigines were not always sounder than those of their white successors.

Excursions into the hilly towns in the vicinity of the river, generally yield but poor returns to the antiquarian; however diligent and faithful he may be in his researches; he is soon satisfied that he has left the favorite haunts of the red man behind him; and he will be very likely to have a feeling of loneliness steal over him and desire to return to a region more prolific in relics; as a man fond of society hurries from solitude to join the company of many friends.

Passing from the Connecticut Valley to the seaboard, we there find that the favorite localities with the Indians, were those hills and the protection of such cliffs as were close adjoining to muscle beds and clam banks. In the township of Marblehead, commencing at the extreme western portion of the township, in the vicinity of the Forest River Mills, we find several huge deposits of shells close under a range of hills bordering the sea. That these deposits were made by the Indians is amply proved by the relics found scattered among them, (including the bones of wild\* animals long since extinct

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\* One of the lower molar teeth of an animal of the deer kind, and as large as the moose, was found in a deposit near by, a few years ago. J. L. R. of the *Publishing Committee*.

in these regions,) and from their peculiar mechanical structure. One of these deposits contained, by actual measurement, not far from thirty cords of shells, stones and ashes, by far the greater part being fragments of marine shells. The structure of this deposit was, layers of oxydized stone, ashes and shells, alternating in that order. This would seem to indicate that the Indian was accustomed to cook his dinner of to-day on the refuse of yesterday. The shells which compose these banks are, with the exception of two species, the same as now abound along our coast, though not in the same proportion.

The *Pecten concentricus* has been, I believe, generally considered to have been restricted to the eastern and southern shores of Cape Cod, either by reason of a nice sensibility to changes of temperature or want of a usual degree of dispersive energy. Now it may be interesting to note, that this rather unique restriction is, after all, probably more the work of man than of nature, as, in the large shell bank above mentioned, this species is abundant, and appears to be about evenly distributed throughout the mass.

A few individuals of another kind, now extinct in this vicinity, are found in this deposit, viz : *Ostræa borealis*, or oyster; though I am informed, on good authority, that on the opposite shore, large deposits of shells formerly existed, which consisted almost entirely of this species.

Marblehead was evidently a favorite place with the red man; her isolated location, beds of shell-fish, and her bold shores, still famous for the abundance and variety of fishes, were evidently great attractions. Naumkeag, the name which he gave to this locality, meaning "good fishing place," would indicate that he recognized these characteristics. Accordingly, relics are found on almost every part of her area, and in some localities in great abundance. In addition to the shell deposits referred to above, her shores are literally lined with chippings of stone and broken fragments of unfinished relics.

One of the most interesting relics of this town is an Indian fortification, located on a hill nearly opposite to the mansion house of the Alley farm, on the road from Marblehead to Lynn. In the historical writings of Mr. J. B. Felt, this is mentioned as early as 1686. If other evidence were wanting, it might be found in the traditions of the oldest residents. The location is on a hill, which extends farther than any hill in the vicinity into a plain abounding in relics, and situated at the narrowest part of the peninsula of Marblehead, and at the entrance of said peninsula. The following are the dimensions of this

fort :—From outside to outside, 56 feet Width of elevation surrounding it, 6 to 8 feet. Depth of elevation, 2 to 2½ feet. Width of ditch, 6 to 9 feet. Depth of ditch, 2 to 4 feet. Diameter of platform inside of ditch, 25 to 30 feet. From a depression in the surrounding embankment I infer that the entrance to this fort was from the east.

Within a rod of the large shell bank in the vicinity of Forest River Mills, a little to the left of it, as one stands facing the harbor, may be seen several bushes and a cedar tree growing somewhat isolated in a circular space of about eight feet in diameter. If the antiquarian will continue his explorations along this range of hills, so prolific in shell deposits, he will find, after crossing the railroad track and scaling the steep hill before him, in a romantic depression near the summit of this hill, and within a few feet of a shell deposit, a second circular growth of bushes, of nearly the same diameter as the one above mentioned. May not these indicate the ancient location of Indian wigwags,—the abrasion of the sod having supplied a ready seed bed.

When did the Red man settle New-England? This is a question on which, with the exception of the writings of the Northmen, history is wholly silent. The Northmen have chronicled that when they visited 'Vine-Land' they found the Esquimaux dwelling there. What light may these shell deposits shed on this question? The largest deposit contained about thirty cords of broken shells, ashes and stones. I find by experiment that shells broken about as much as these will make about two thirds the bulk of the same shells when filled with the living animals. If we call one third of this mass, ashes, stones and earth, which appears to be about a fair proportion, it must have taken about thirty cords of live shell fish to make the mass. From the lazy habits of the Indian and the narrow limits of his resources, considered in connection with the fact that they were always close at hand and readily accessible, I infer, that while he dwelt in the vicinity of these deposits, molluscs were his chief dependence. Assuming that the great deposit was made by the addition of a peck of shells daily (probably a small allowance for a single Indian family,) and assuming in round numbers eighty bushels to the cord, we have nearly twenty-seven years for the time necessary to accumulate this deposit. Within the township of Marblehead there were, a few years since, not far from one hundred cords of these shell deposits. Assuming that

all were accumulated at the above rate, but little over a century would have been sufficient for all of them. The terms on which this calculation is based, admit of many possible and probable variations,—yet I think that no reasonable man could be brought to believe that these deposits were more than two centuries in forming. I have excellent traditional authority, that additions to these *were* made by the aborigines within the last one hundred and twenty-five years. By this, I infer that four centuries ago, none of them were in existence. But granting this, it does not necessarily follow, that Indians had not previously formed settlements in what is now our New-England States. They may not have come to our sea shores until after other and inland encampments; and the township of Marblehead may have thus been one of the last localities selected by them. It seems to me, however, more probable that their roving habits made them early acquainted with our coasts, while their narrow resources led them also to depend upon mollusks for a large portion of their subsistence and usual food. Add to this, the number of Indian tribes found here by the early foreign settlers and abundant evidence of a much denser population shortly anterior to their arrival, would seem to indicate that Naumkeag was early appreciated as a “good fishing place.” These surmises may seem to many wholly worthless, and it is only from the utter silence of history respecting the time that I am led to pen them.

When first arranging my collection I was inclined, in accordance with general testimony, to classify all the stone points as either spear heads or arrow heads, but the predominance of the larger points, which could not by any possibility have been shot from a bow, was so great, as to render it highly improbable that so large a proportion could have been used only for spear heads. An examination of the collection in the antiquarian rooms at Worcester, removed the difficulty, indicating that a large portion of them were tomahawk points. These specimens show the stone point inserted in a knob at the end of a club of wood. Various modifications of this weapon will be found in some of our late school books—among others in Miss Emma Willard’s school history, in the engraving representing the condemnation of Capt. John Smith.

It may not be uninteresting to present a few general inferences, drawn from a careful examination of my collection (embracing about 300 specimens of all kinds of relics) and of localities from which they were obtained.

1st. It will be observed that the difference between the

arrow and spear heads and tomahawk points, apparently is only in size, and that the dividing line between them is not easily determined.

2d. The form of the blade or body of these appears to vary between the triangle and ellipse.

3d. Among the specimens obtained from twenty townships in Massachusetts, Vermont and New-York, there appears to be no form *peculiar* to any of the localities—yet, as the proportion between the various forms in the different localities is by no means the same, there was evidently some preference, perhaps arising from the nature of the material used.

4th. The arrow and spear heads from Georgia, South Carolina and Louisiana, are oftentimes serrated at the edges, and have occasionally a spiral turn given to their extremities; they are also often thicker and of a clumsier structure.

5th. In the *material* of which they were made, with a few seemingly fanciful exceptions, preference was given to some hard and tough variety of stone, of a compact structure, having a conchoidal, or roundish fracture, which would enable them the more easily to form the central ridge, and thus add strength to the blade. The kind of stone out of which by far the greater portion of those found in the Connecticut valley were made, appears to be a bluish hornstone. This is believed by many to have been obtained from Mount "Kineo," a huge mass of hornstone on the borders of Moosehead lake, N. H. In the eastern part of Massachusetts, porphyry was almost exclusively the material. In the South, burr stone was the principal material.

6th. The process of manufacture. If, as is generally believed, the aborigines, (those which are included under the name "Indian,") previous to their intercourse with the whites, possessed no metallic instruments, (copper possibly excepted,) their implements, ornaments, &c.. must have been made by stone tools. It is past comprehension, how the savage Indian, with such rude implements, could have fashioned these stone points to a degree of perfection, that no artist could excel, if indeed he could equal, with all the aids of civilization at his command. By examining a series of these points, in all degrees of progress towards perfection, we find that he began with a pebble, or else a fragment of stone of many times the area of the arrow head, that he had in view, doubtless with the object of preventing injury to the embryo arrow head, from the first rough chippings, which, from the half-finished specimens and the numerous chippings to be found in many localities, were, on an average, 1 (when the material was close at hand) of an inch in length, and a third to half an inch in width. After having

obtained the rough form, we can perceive, from the direction of the conchoidal fracture, that it was their practice to strike from the edge towards the centre; and when the central ridge became too high, to remove it by blows parallel with the length of the arrow. This process was continued, the chippings, of course, becoming smaller and smaller in size as the arrow head approached perfection, until all was finished, except the very edge, which, as a late eye witness informs me, was gradually brought to the desired degree of perfection by a grinding pressure, which worked off particles almost as fine as flour. In proof that the art is still carried on in the highest degree of perfection, a gentleman lately from California presented me with an arrow head, manufactured by an Indian squaw, from a fragment of a glass bottle, which, in respect to exquisite finish, I have very rarely seen surpassed by any relic of this class. He informs me that in the process of manufacture, of which he was, for a short time, an eye witness, the arrow head was held between the thumb and two first fingers of the left hand.

7th. In three instances, deposits were found in the Connecticut valley, containing from forty to more than a half peck of these stone heads, in the first stages of manufacture, having had but little more than the merest outline given to them. Again, in the localities of the Connecticut valley, where relics are found, it is comparatively rare to find these points in a very rough state, and partly broken, and the chippings scattered around are quite small-sized; while along the sea-shore, where the porphyry ledges and boulders abound, stone points, broken in the process of manufacture, and usually, in quite a rough state, are very frequent, and the chippings are very numerous, and in average of a much larger size. From these facts, I conclude that it was, more or less, the practice of these Indians to roughly hew the stone for their arrow points, into the proper form, at the localities where the material abounded, and then transport these rough forms to their villages, and there securely deposit them, awaiting their leisure to finish.

8th. Some arrow points have a projection added to the blade or body of the head; others are slightly notched, on each side of their bases, while a third class have neither notch nor shaft, and have, for their bases, a straight, sharp edge, or a curved, sharp edge, and are generally of a much smaller size. These peculiarities, without doubt, are indicative of the different methods by which the various heads were secured to the shaft of the arrow. It is generally



believed, that the stock was split, and the head secured, after insertion in the cleft, by a fastening made from the sinew of some animal. We must except the third class, which, probably, like those mentioned in CATLIN'S great work, were secured by animal glue, at the end; so that, perhaps, it might be set free by the warmth of the blood, and left behind, already poisoned, to rankle in the wounds of their enemies.

**TOMAHAWKS.** Who has found a genuine stone tomahawk, after the approved model of the picture books? After diligent inquiry and an examination of thousands of relics, I have, thus far, found less than half a dozen having anything approaching to the form of a hatchet, or that, from their size, can reasonably be supposed to have been used single handed, or to have been hurled from the hand. I am, therefore, driven to two inferences, viz.: if the tomahawk was of the form and size which is usually represented, hatchet-shaped, and capable of being thrown from the hand, and so common a weapon as history leads us to infer, its general introduction as a weapon must have been coeval with, and the result of their intercourse with the white men, from whom they must have obtained them made from metal. My second inference is, that the ancient tomahawk, considered as a weapon for inflicting blows, was not hatchet-shaped, and, very possibly, not designed to be hurled from the hand, being in the form of a club, having a large natural knob on one end, in which was inserted a sharpened stone head, of the shape, but of a larger size than the arrow head. If it be asked, Why not then call these stone war-clubs? Let us see.

**WAR-CLUBS, PESTLES. BREAD-ROLLERS.** Thus, under these three classes, I would include, (or rather tradition includes) cylinders of stone, from one foot to two feet and a half in length, sometimes growing gradually less in diameter towards their ends. I incline to believe, that tradition is correct in classing part of these as war-clubs, from the fact that the ends of many of them give evidence of little or no wear, and several of them are suddenly reduced in diameter towards one end, as if to give the hand a firmer grasp; and it appears exceedingly improbable that the aborigines could have used them as we use pestles, for striking vertical blows; for, if so, why are not the accompanying mortars found, without which, grain would fly in all directions, when submitted to such careless trituration. In the collection of the East India Marine Museum, in this city, may be seen what was probably a stone mortar; but it is of small size, and the accompanying pestle is

- not a third as large as the average of these, which I am inclined to class as war-clubs. Local traditions have considered them war-clubs, and I think that it is reasonable to assent.

**INDIAN AXES.** These weigh from three to seven pounds. In shape, many of them are very like the common axe; others combine the form of the broad-axe with the rounded edge of the common axe. Was not the ancient Pilgrim axe straight edged? if so, then may not the stone axe of the Indian have been the model after which our modern axes have been fashioned? The rounded edge economized the power applied, by bringing all to bear on a small cutting surface. Did the Indian originate this important improvement?—certainly a very interesting question. The axes and tomahawks have uniformly a groove worked around them, doubtless for the reception of the handle. And this may be a fitting place to state the way in which tradition says handles were attached to axes, tomahawks, hoes, &c. Two methods are stated, and the first was probably in use for such as were grooved, viz: A withe was twisted firmly around the instrument, as a blacksmith puts a handle to his chisel; or a sapling was split, and the instrument, having been placed in the cleft, was secured by binding with withes or sinews. Another method, which we have on the authority of an intelligent man, who received it traditionally from his ancestors, who had seen it practised while prisoners among the Indians of Canada, was, to select a young sapling of a suitable size, pierce it, and, giving it a short split down, thrust in the weapon, and leave the securing of it to mother nature.

**CHISELS AND GOUGES.** These are not very rare relics, and their names explain their forms. Tradition says they were principally used to work out charred wood and trunks of trees, to some rough shape desired. Some of them have grooves, to receive handles. They are rather common relics.

**SKIN DRESSERS.** Tradition says that these were used to skin the animal, and afterwards to work the skin pliant. These are not grooved.

- **INDIAN HOES.** These were found principally on the meadows of the Connecticut. They were made from trap-rock, being fragments of much the shape and the curvature of the common hoe, though longer in proportion to their width. They are usually notched on their sides, and bear evident marks of the use to which they were put.

**POTTERY AND KETTLES.** The materials used in the manufacture of pottery was clay, and, for kettles, a coarse variety of soapstone, and occasionally some primitive rock; the kettles had short handles, like those on a common sugar bowl. The clay used was, by no means, well purified from foreign substances, previous to baking. The forms, of which there was evidently a great variety, were always symmetrical, and, oftentimes, even elegant; while the ornamental work found stamped or marked on almost every specimen, display much taste. In this latter respect, modern pottery might be decidedly improved in elegance, by copying from these Indian remains for models. It is evident that, either in the process of manufacture, or in after use, fire was sometimes kinkled inside the ware. The material used in the North was very impure, abounding in pebbles; for this reason, and the fact that the vessels here were mostly thin, it is rare to find remains of a large size. Southern pottery was made from purer clay, and being much thicker, and not having had our Northern winters to beat upon it and decompose it, specimens can be obtained in larger fragments with the ornamental markings oftentimes quite distinct. Of the art of glazing the aborigines appear to have been wholly ignorant.

**INDIAN PIPES.** These were sometimes baked from clay, at other times cut from stone, the bowl being after the same general form as the modern pipe, with a hole in the side, in which a reed was probably inserted. In one instance a large stone handle was attached to the bowl, and as this was not perforated the only means by which it could have been put to the use intended, must have been by the insertion of a reed into the top of the bowl after its contents had been ignited. Tradition says that corn-cobs were sometimes used as pipes in this way.

**INDIAN ORNAMENTS.** These are rather rare in the North. They were made principally from soft stones, of clay and talcose slate, and the famous red pipe claystone, which would seem to indicate that the Indians of New England had some commerce with the Indians of the West, or that they kept them as tokens of their migrations. They are usually parallelograms, with rounded corners, with diameters of three inches by one and a half or two, or else ellipses having about the same diameters; in either case they had one or two perforations, and were probably worn suspended from the neck. Beads are rarely found in the North, and such as are found are generally of European origin.

**SINKERS.** These are stones weighing from a quarter of a pound to three or four pounds, of various fanciful shapes and always grooved, or having some means for attachment. It is generally conceded that they were used in connection with the fisheries.

**VARIOUS RELICS.** Under this head I include relics, the intent of which is not very certain—comprising what were probably stamps for pottery, stones probably used for pulverizing, stones pretty evidently used for sharpening purposes, circular stones about three inches in diameter and an inch in thickness with a slight depression in the centre of each face, and probably used as quoits, and what appear to be scalping knives, gun flints, &c. &c.

**ANCIENT INDIAN GRAVES** are occasionally found. In the vicinity of Nantasket beach, just at the entrance of a private road leading to the "Atlantic House," may be seen numerous depressions which have proved to be Indian graves. In these, numerous highly finished relics have been found in a fine state of preservation.

**NORTH AND SOUTH.** The relics of the Southern States are more numerous, of greater variety, and in a better condition than those found in New England. From extended means of observation I can confidently make this statement.

In assigning names to the various relics, presented this evening to your notice, I would remark, that great reliance has been placed on the old adage "what everybody says must be true"—the fair weight of which may be estimated when it is considered that most of such names are traditionary, found in the localities where the relics themselves were obtained. From the study of the peculiar features of the individual relics, much of the interest and profit of a collection springs; but the proper limits of this paper, and the want of means of further illustration, have compelled me to dwell sparingly on these peculiarities.

With a desire to express my sense of a profound gratitude for repeated acts of kindness on the part of so many, to which I have been so largely indebted while forming my collections, I close this extended article.

*Marblehead, (Mass.,) 1857.*

At the close of Mr. Gregory's lecture, remarks were called forth from the chair, Messrs. George D. Phippen and Jacob Batchelder.

*Voted*, that the thanks of the Institute be tendered to Mr. Gregory, for his interesting and instructive observations, with a request that he prepare a paper upon this subject, to take its place in the published Proceedings of the Institute.

*Voted*, to adjourn.

*Friday, May 8, 1857.*

Evening Meeting at 8 o'clock—Henry F. King in the chair. Records of the preceding meeting read. Donations were announced as follows :

To the library—from E. C. Webster, R. Edwards, Timothy Davis, M. C., William Brown, Mrs. L. P. Robinson.

To the Cabinets—from J. C. Howard, and G. F. Read.

A letter from the Boston Natural History Society was likewise read.

Jacob Batchelder, chairman of Committee on certain queries proposed to the Institute, in a letter from Rev. G. B. Perry, of Groveland, and read at the Field Meeting, in North Danvers, Sept. 13, 1856, submitted the following elaborate and interesting Report, which being, on motion of H. J. Cross, accepted and ordered to be filed for publication, is here inserted.

To understand the causes of the various forms of the development of Electricity, an accurate knowledge of the facts and the circumstances of each event is necessary; and when such knowledge can be obtained, it is not impossible to refer all the even local phenomena of electricity to a few general laws. But the philosopher is not the only one to notice and to comment upon such events, and in the midst of the excitement and

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confusion attending them, observations are often made, which are marvellously ill adapted to promote the development of truth.

Thus our daily journals inform us that in South Abington, during the year 1856, the lightning struck a pine, shivered an oak, and removed from the two extremes of a worthy citizen, his hat and a stocking; in a neighboring city, it cleared the breakfast table of every thing but a dish of boiled eggs; now had the eggs been removed and the dishes left, it might have been set down as an ordinary domestic calamity, but the reverse of this perplexes the mind of the electrician. In another town, a pan full of milk was lifted from a table where it stood in its proper place with others, and was placed on the top of the other pans, without spilling the milk. Now it is possible that the domestic in the last two cases forgot to mention that she was a little confused under the excitement incident to the electric visit, and might not have recollected all that she herself did on the occasion.

It cannot be denied that in recent times electricity has had the credit of performing still greater miracles, and it becomes not us to deny its dormant capacities; we patiently await their full development.

But it is not to make large draughts on the faith or the fancy that electricity should be studied. Not as philosophical amusements, but as the oracles of nature in its usual action, should the phenomena of the laboratory of the chemist be observed. The Leyden jar must typify the earth and its surroundings—the thermo-electric bars of Bismuth and Antimony—the solid ribs of the earth—the attraction and repulsion of electricity—the changes in universal nature.

To a certain extent, this analogy has been shewn; the electric spark has been proved to be of a nature identical with that of the atmospheric discharge;—the galvanic current through the insulated wire coil—has produced polarities analogous to those of the earth. One by one the extraordinary manifestations, seeming exceptions to its normal action, are reduced to general laws.

This is the extent of our investigations. To succeed in this affords us gratification. But when we attempt to scan more deeply the mysteries of nature, to discover the cause, the *primum mobile* of the universe, we are reminded, by our failure, of the limits of our capacity.

It is not for mortal mind to pursue the investigation of any subject to a perfectly successful issue. The triumphant declar-

ation sometimes ventured, in eulogy of a favorite writer, that "he has exhausted his subject," means but that he has exhausted his own and the resources of his eulogist.

In the discussion of electricity few attempt to dogmatize. As the air and the ocean have hitherto defied the efforts of man to convert them into real estate, so electricity but partially subdued by theory, still invites, nay, defies the scientific student to drive again the shuttle through the web of theory.

In the investigation of this subject, it is necessary to assume the following postulates :—

1. That electricity exists in all bodies.
2. That it exists in two conditions, positive and negative.
3. That each kind repels itself and attracts the other kind.
4. That the two electricities tend to an equilibrium.
5. That this tendency produces lightning and other changes in nature.

Every recorded series of experiments on the air favors the idea that it is usually positive as it rises from the earth, and that the surface of the earth is usually negative, though the conditions of both are sometimes for a short period changed.

The negative state of growing vegetables appears to result from conditions analogous to those of the galvanic battery in active operation; the earthy mineral, salts in solution, and the vegetable, having their analogy in the copper, the sulphate of copper, and the zinc of the battery.

Thus the solution of the salts of the earth furnished by a supply of rain is decomposed, the alkali passing to the plant, and the acid selecting the more positive pole the earth. But when *free* alkali is in excess, it may form a solution for evaporation, according to the observations of Becquerel, giving a more decidedly negative character to the earth's surface, and by the induction of electricity promoting the positive character of the atmosphere at a distance from the earth, the stratum of air between them acting as an electric; giving us the condition of a Leyden jar,—the earth's surface being the outer coating, the air remote, the inner or positive coating,—and the air between, the glass separating the two.

Thus clouds are repelled to a distance from the earth's surface, till a current of moist air, a mountain height, a tree, or any elevated object, furnishes the medium, when the equilibrium is restored by a discharge or lightning flash.

As there are however opposite currents of air above us, it is

highly probable, that the different strata are alternately positive and negative, typified in the coils of the electro-galvanic series;—where the positive insulated coil of copper induces a negative state in an insulated coil of wire above it, and thus alternates in a series of six or seven coils.

The electricity in the form of lightning during the past year has been unusually active, but by the observations of Mr. Asa Lamson, of this city, the cases were not so numerous as in the years 1846 and 1850.

The number of electric exhibitions observed by him were

	Number.		Number.		Number.
in 1881	22	in 1840	27	in 1849	24
1882	19	1841	21	1850	37
1883	18	1842	26	1851	32
1884	26	1843	22	1852	29
1885	20	1844	26	1853	28
1886	16	1845	28	1854	32
1887	15	1846	39	1855	21
1888	27	1847	29	1856	34
1889	21	1848	31		

We perceive by this table that the *number* of electrical disturbances observed by Mr. Lamson was less in 1856, than in 1846 and 1850; but of these discharges the number of those of forked lightning in the year 1856 must have greatly preponderated.

We may now consider and endeavor to answer the questions, proposed for the consideration of the Institute by Rev. G. B. Perry, and by it, referred to this Committee.

1. Has the exemption of buildings through lightning rods, been such as to justify the general confidence reposed in them?

To most of those who have given any attention to the subject, it is a matter of surprise that any doubt should exist, that *nearly absolute safety may be secured* by the use of rods erected on scientific principles.

Mr. Ebenezer Merriam, of Brooklyn, N. Y., in a communication to the Journal of Commerce, says, that he recorded 39 deaths by lightning, and 27 thunderstorms, in July, 1854.—“Our record, says he, gives an aggregate of 750 deaths on the land for the period of 14 years, *only one of which* occurred in a building furnished with lightning conductors, and that one in the summer of 1855, at Little Prairie, Wisconsin. There were three buildings burnt by lightning in



this country, the last year, which were furnished with conductors, a barn in West Chester Co., a house in Richmond, Va., and the house of Mr. Van Renssælær, in St. Lawrence Co., N. Y. We have in vain endeavored to learn the particulars in each case." He proceeds to declare that in no other instance, ashore or at sea, has any case of death been made known to him. He recommends *continuous rods with glass insulators*, as the surest protection against lightning. He gives a description of the house of Mr. Nathan Frye, of this city, and attributes the failure of the two rods to protect it, to the size of the house, to the number of chimneys and the imperfect arrangement of the rods. He gives an extract from a letter by Prof. Henry, relative to the shock which visited the building of the Smithsonian Institute, in which the latter declares that the reports of great injury done were much exaggerated, as he was in the building at the time and was not affected; that two other persons stood within a few feet of the rod and felt no shock.

Mr. M. describes the shock that struck the house of Mr. James Spillman, of Morrisania, though protected by rods, and shews that the injury to the house resulted from the *upward passage of the rod from the chimney to the top of the roof*, at which point the injury was done, while another part of the house at which the rod descended directly to the earth was uninjured.

From events of this character, doubt has arisen in some minds of the efficacy of lightning rods, when, if the causes of their failure were duly weighed, the incidents would furnish additional proof of their value.

A work recently published in England, entitled "Three Years in Canada," written by F. MacTaggart, Civil Engineer of the British government, contains the following *patriotic* declaration:—"Science has every cause to dread the thunder rods of Franklin; they attract destruction, and houses are safer without than with them."

As if for the express purpose of deciding this question, the Nautical Magazine of March, 1853, says, "objections to the employment of lightning rods have been so strenuously made, that the Governor and Council of the East India Company, were led to order the lightning rods to be removed from their powder magazines and other public buildings, having in the year 1838 come to the conclusion from certain representations of their scientific officers that lightning rods were attended by more danger than advantage."

In the teeth of which conclusion a magazine at Dum Dum,

and a corning house at Mazagon, *not having lightning rods*, were struck by lightning and blown up. But no such instance of magazines preserved by rods for seventy years has occurred.

No supposition can be more erroneous than that which ascribes to a well constructed lightning rod the power of drawing the thunder cloud into its vicinity. An experiment by Dr. Franklin sets this matter in its proper light. He insulated a scale beam hung on a vertical pivot, from which one of the scales had been removed, and into the other a light bunch of cotton wool had been placed. He then charged the beam with positive electricity, giving it at the same time a horizontal rotatory motion over the surface of a table; when he placed beneath the scale as it revolved a piece of blunt iron, the scale descended towards the iron to give off its explosive discharge; but when he substituted an iron point for the blunt iron, instead of descending, the scale, having lost its electricity to the iron point, rose quickly above the table. Thus a cloud, instead of approaching a forest of lightning rods in a village, would be deprived of *the electricity which has kept it so near the earth by attraction* and ascend in consequence of the loss of it.

That the confidence so generally felt in the efficacy of the protection of lightning rods, is not misplaced, has been triumphantly proved in cases innumerable.

In 1769, the Jacob tower, in Hamburg, was furnished with a rod; and after the cathedral at Sienna had been repeatedly struck by lightning the authorities concluded to follow the example of Hamburg, and erected conductors. The inhabitants at first regarded them with great terror, and stigmatized them as heretical. But on the 10th of April, 1777, a heavy shock of lightning visited the tower and glided harmlessly to the earth; the church has not been injured since, and the conductors are absolved from the charge of heresy.

Old St. Paul's church in London, unprotected by rods, was twice struck and damaged. The present structure, though more elevated, being provided with rods, has never suffered from electricity.

The cathedral of Geneva, the most elevated in the city, has for more than two centuries enjoyed perfect immunity from lightning; while the neighboring bell tower of St. Gervais, though not so elevated, has often been struck and damaged. In 1771, Saussure by examination discovered the cause to consist in a complete coating of tin plate from the top of the Cathedral spire to the base of the tower, thence by metallic water pipes to

the ground, forming a series of conductors analagous to those of Harris.

But if lightning rods are useful to protect buildings, still more useful are they for the protection of ships. In the British navy, between the years 1810 and 1815, forty sail of the line, twenty frigates, and twelve sloops, were damaged by lightning. Between 1739 and 1793, seventy-three men were killed, and several hundred dangerously wounded by the same instrumentality. The amount of property destroyed cannot be estimated. The main-mast alone of a seventy-four, costs originally \$5000. To this must be added the cost of its removal, of ruined spars, rigging, hull and stores, and the daily expenses of the ship, varying from \$400 to \$550 per day. This estimate glances at the cost of *repairing* those not totally destroyed by lightning. In the space of forty-six years the *average* expense thus accruing amounted to \$30,000 per annum. Probably some of those ships that "sail from their port and are never heard of more" are destroyed by lightning.

To the foregoing estimate must be added the casualties occurring to vessels weakened by the electric shock, and afterwards lost in struggle with the wind or the foe. "The Guerriere is an instance," says the Nautical Magazine, "of a frigate fighting a superior force with her mainmast in a defective state, by a stroke of lightning, and which might have stood but for this defect. The mainmast was carried away in battle, by the fall of the foremast across the main stay, which certainly might not have led to this disaster, had the main-mast been in an efficient state. The loss of all the masts was the loss probably of the ship."

The British government at length resolved to furnish the national vessels with the most approved system of conductors, that of Sir Wm. Snow Harris. This measure was fully justified by the result. For between the years 1828 and 1840, upwards of sixty ships of the line had been exposed to lightning in all climates without sustaining any damage; while for the rest of the navy on different stations and not so protected, there were damaged by lightning, 7 ships of the line, 7 frigates, 30 sloops, and 6 smaller vessels and steamers, in all 50 vessels, averaging more than one-fourth of the British navy in commission. In a period of twenty-two years, of the ships of the navy at sea, those without conductors, compared with those with conductors, the number struck was in the proportion of three of the former to two of the latter.

Induced by such facts and considerations, the British government, in the year 1846, selected ten vessels to wear suits of lightning conductors, and sent them to different parts of the world and into all climates during one year, and, finding every ship effectually protected, before the year 1848, furnished every vessel in the British navy with a similar protection, and the East India Company followed the example of the British government.

The Committee therefore do not hesitate to declare their belief that "the exemption of buildings from injury by lightning, through the protection of lightning rods, *has been such as to justify the general confidence reposed in them.*"

2. Have not single trees and groves afforded greater protection than the metallic rod?

It admits of no doubt that trees serve as natural conductors, and especially those, of which the leaves are linear. A case in point is quoted in Franklin's Letters. A Mr. Wilcke saw a large fringed cloud strongly electrified, and extending its inferior surface towards the earth, which suddenly lost its electrical character in passing a forest of tall fir trees. The ragged and dependent portions shrank back upon the main cloud, and rose up as it were from the earth.

The conducting power of trees results only from the water they contain; for dry wood, especially when baked, becomes a non-conductor; water by the estimate of Mr. Cavendish, has to iron a conducting power of only one to 400,000,000.

Whether a grove would adequately protect a dwelling, depends entirely on the quantity of metal used in the construction of the latter. It appears that the trees which have been visited by thunderbolts have not been able to protect themselves. In other words the obstruction to the current of electricity has been such as to furnish no passage to a large quantity of the fluid, as in the case of lightning rods badly insulated, which have been forsaken by the fluid for a better conductor.

Among the trees struck and more or less injured by lightning the past year, have been noticed sycamores, pines, oaks, apple trees, elms and locusts. If trees possess a higher power of conduction than a moistened bundle of wooden rods of the same height, it is attributable to the increased evaporation from their leaves and branches; especially is this true, when the electrical condition of the atmosphere is highly intense.

By experiments, it has been shown that a living plant evaporates from one third to one fourth more when electrified, than in its natural state; so that not only the tree, but its column of vapor, serves as an electrode through which the positive electricity of the air passes to the earth. Animals, in like manner, by their profuse evaporation, greater than that of vegetables from their higher temperature, furnish better conductors than trees; in confirmation of this, is the common direction given in our scientific works, to avoid the shelter of trees. The electricity, leaving the worse conductor the tree, selects the better the animal. It may even be lured from a lightning rod of small capacity, by a mass of the same metal of greater magnitude.

Some facts furnished by Mr. Warner, before quoted, are here available.

He writes, "there were apple trees of good size on the North and the South of the barn that was struck, at about the distance of three rods. I have a barn 65 rods west of my house, which has been struck; the same shock went through an apple tree to a post in a fence some seven feet from the tree, which it split and tore in pieces. I could see no mark on the tree, but it has since died. This tree is 30 feet from the barn. Six rods northerly is wood land; lightning has struck in these woods. I do not know of any minerals in the land in this vicinity, which would attract the lightning, but the land is rolling and of a strong moist soil."

In South Abington, an oak was shivered, and a pine was struck; and another in Reading. In Plymouth, an apple tree was struck. In Exeter, a pine tree was cut off, and fell to the earth in an erect position. July 15, a locust was split in Hamilton, 80 rods from Dea. Loring's house. A large elm was struck in Dedham.

In every instance of the passage of lightning through trees, brought to the attention of the Committee, the tree has been found to suffer to a greater or less extent.

If then we find the tree incapable from its conducting power, of defending itself, we should judge that lightning would need little inducement to forsake it for a building in which iron to a greater or less extent is employed; nay, even animals in the vicinity of trees would be exposed to greater danger than in an exposed situation in the open air; for the tree by its great height would first receive the shock, but would not withhold it from an animal within the sphere of attraction. The

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Committee would therefore decide the second question in the negative.

3. Whose rods, and of what construction have afforded the greatest security ?

The best rods or those which have stood longest the test of time were invented by King Solomon ; for the temple, was unharmed by lightning during one thousand years. The whole roof bristled with metallic pinnacles, the body of the building was covered with plates of gold, and water spouts from the roof descended into deep cisterns of water. This was the system of Solomon.

If then we elevate a sufficient number of points to furnish a passage for the electric fluid, and with surface sufficient to prevent any part of it from seizing some iron bar, zinc roof, tinned porch or window-casing, we have complied with one essential condition ; if we keep open a sufficient number of these passages to the earth, and spread the rods into points below as above, we have answered another condition. If different parts of the house are furnished with metals, these substances should be united by wires with one of the main trunks ; if, however, we insulate the system of conductors, furnish a sufficient number of them, and thus prevent the fluid from reaching the imperfect conductors within the building, we shall have answered the same purpose.

An excellent system of conduction for our buildings is that of George W. Otis ; for ships that of W. G. Harris.

The rods of the former are constructed from 3-8 in. iron elevated above each chimney, the points of the ridge pole and other prominent elevations, presenting either a branch of points or a single point, gilt, extending over the ridge-pole down the rafters to the earth, united with a screw and socket, and insulated from the building by means of glass cups.

That of Mr. Harris, consists of a double strip of copper, sunk into each mast and spar by a shallow channel, to bring the metal flush with the wood ; the strip being interrupted at every few feet to give way readily with the bending of the spar, and still so as to preserve its continuous extension. The strips extend from the mizen mast to the stern-post, from the steps of the mast to the metallic bolts passing through keelson and keel to the water ; also bands of copper pass under the beams leading to the iron knees or metallic fastenings, passing through the side of the ship, the whole formed with shut joints, and making of the ship a compound metallic mass, little liable

to be destroyed by any electrical shock to which it may be subjected; this system has had a trial of 18 years in the British navy, and even the common sailor has merged his suspicion into admiration.

The Committee declare it to be their opinion, that *any system* of conductors, sufficiently elevated, presenting a sufficient number of points, perfectly continuous, presenting competent surface, and pursuing the most direct route to the earth, claims and should receive the full confidence of the public.

4. Are some trees better conductors than others, as the elm for instance than the pine, and therefore more efficacious protectors?

In the cases of this nature which have been noticed the past year, it has almost invariably been found that the pine when struck has been shivered. But the elm receives the shock more patiently, perhaps its exceeding strength enables it better to bear the shock. The oak usually manifests the effects of the contact. The North American Indians have a tradition, which declares that the beech is never struck by lightning. Tiberius, the emperor of Rome, wore a wreath of laurel as a protection from lightning. Since tradition is usually founded in truth, we may infer that, so far as its authority extends, the affirmative is the true answer to this question.

Possibly the trees whose branches make a small angle with the trunk, are better conductors than those constructed with greater angles. The angles of the branches of the beech and the elm are small; those of the oak, the apple, the locust, the sycamore and the pine are large. I have spent six years in the vicinity of a grove of Lombardy poplars, but knew no instance of violence done to them by lightning, or to the buildings which they shaded.

Has the maple, the willow, or the birch, been known to suffer from electricity?

Facts in relation to this question are few indeed, but what there are, lead to the conclusion that some trees *are* better conductors of electricity than others.

5. Are the amount and operations of the electric fluid considerably affected by the growing and ripening harvests?

It may be regarded as an established fact, that a chemical change in the form of bodies is attended with the development of electricity.

Now in the production of electricity by the sulphate of copper battery, we have the decomposition of water and of the salt; and the formation of an oxide of copper, and a new salt, the sulphate of zinc; and in this process, abundant electricity is set at liberty.

M. Becquerel, by a series of experiments, has shewn that between the plant and the soil flows an electric current, the soil being positive and the plant negative; that by the banks of a stream the phenomena are complex, the alkaline waters being negative, and acid waters positive. If so, then the deposit of the salts of soda, potash and ammonia in vegetables may be the cause of their negative electricity. And when a thunder cloud surcharged with positive electricity approaches the ripening harvests, the conditions become such as to favor a discharge of electricity between them.

Arago says, that wheat fields, after a thunder storm of sheet lightning, suffer from the breaking of the stalk and the dropping of the heads of wheat. That the growing and ripening harvest exercises an influence on the electrical condition of the air, may be affirmed on the same grounds that warrant our conclusion that trees and forests act in this way. Evidence on this subject is not abundant, and it is to be hoped that the facts and opinions just presented may stimulate other minds to other and more extensive researches.

For the Committee,

JACOB BATCHELDER, *Chairman.*

The Chair presented the meeting with notices of the blooming and budding of early spring flowers in 1855 and 1856, from notes kept by Mr. S. B. BUTTRICK, whose personal observations on the aspects of the flowers are so well known.

#### CALENDER OF SPRING FOR 1855.

April 27. *Leontodon taraxacum* (*dandelion*), *Saxifraga Virginensis*. *Viola ovata*. *Thalictrum dioicum*, *Hepatica triloba*, *Ictodes foetida*, *Acer rubrum* in flower, and *Columbine* beginning to bud, near the Marblehead Rail-road track and in Derby's woods.



May 24. *Viola cucullata*, *V. lanceolata*, *Caltha palustris*, *Ranunculus bulbosus*, *Thalictrum dioicum*, *Trientalis Americana*, *Arum triphyllum*, *Rumex acetosella*, *Fragraria Virginica*, *Convallaria bifolia*, *Potentilla Canadensis*, *Aquilegia Canadensis*, *Thalictrum anemonoides*, *Amelanchier Canadensis* in the Swampscott woods, Lynn.

#### CALENDER OF SPRING FOR 1856.

April 7. *Alnus serrulata* (*black alder*) fully expanded; frogs piping and snow nearly gone.

April 15. *Draba verna* in full flower; some plants going to seed.

April 18. *Hepatica triloba* in full flower near the Marble-head R. R. track. *Sanguinaria Canadensis* (*blood root*) in full flower, *Salix humilis* (*Swamp Willow*) blooming out and *Equisetum sylvaticum* expanded. *Saxifraga Virginensis* beginning to bloom near Pulpit Rock and near the neighboring sunny ledges; the snow has now wholly gone.

April 25. Columbine buds turning red.

April 26. *Erythronium Americanum* (*dog's tooth violet*) in flower near Legg's Hill.

May 2. White frost seen on the sleepers of the Eastern R. R. track. *Gnaphalium plantagineum*, *Viola sagittata*.

May 7. *Potentilla Canadensis*, *Thalictrum anemonoides* *Arbutus uva ursi*, *Acer rubrum*, near Ship Rock.

May 15. *Aquilegia Canadensis*, *Anemone nemerosa*, *Oldenlandia cærulea* (*Houstonia*), *Ranunculus bulbosus*, *Rhodora Canadensis*, *Vaccinium tenellum*, *Fragraria Virginica*, *Amelanchier Canadensis*; peach trees in flower.

May 21. *Viola cucullata*, *V. blanda*, *Arum triphyllum*, *Smilacina bifolia*, *Uvularia sessilifolia*, *Caltha palustris*, in Swampscott woods.

May 22. *Cypripedium acaule* budding, *Panax trifoliata*, *Trientalis Americana*, *Trillium cernuum*, *Coptis trifoliata*, *Thalictrum dioicum*, *Chimaphila umbellata*, in vicinity of Newhall's Crossing and of Ship Rock.

In reading these notes of Mr. Buttrick, the Chair requested the attention of Mr. B. to similar records for the next year, and elicited a promise that a calender of 1857, embracing the entire floral seasons should be furnished the Essex Institute.

It was thought advisable by several, who participated in remarks which these notices of the Spring called forth, that they be published in the proceedings as bearing on other and kindred subjects. The Chair also showed how they might serve as the basis of something like a special treatise on the plants existent about Salem, and which by the inroads of civilization and the laying out of new streets, were rapidly disappearing from our flora. While engaged thus in the passing occurrences of to-day, we are pleasantly reminded oftentimes of what interested others of old, as may be shown in the following

#### MEMENTO OF OLDEN TIMES.

The following bill for fruit and other trees, was handed to the Essex Institute, by N. Silsbee, Esq., and is illustrative of the horticultural ideas of sixty years since :

“Mr. Heisler’s Bill and settlement for Trees. .

1799. For Mr. Nathaniel Silsbee.

##### *Plums.*

No. 1 — 2	Semiana.
2 — 2	Imperatrice.
3 — 2	Bonum Magnum.

##### *Peaches.*

4 — 3	Brattals White.
5 — 3	Early Purple.
6 — 3	Red Magdalin.
7 — 8	Noblesse.
8 — 8	Apricots.
12	Lombardy Poplar.
12	Poplar large leaf.

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45 Trees 2s — \$15.

(Dated) Salem, April 9th, 1799.

Rec’d payment,

(Signed) BENJAMIN STEVENS.”

Twenty-four poplars for ornament, and poplars too; while at this day are twice the amount of kinds of all sorts of

ornamental trees, to be had at any nursery! The decline of the taste for the Lombardy poplar is a striking instance of the fickleness of the public for fancy articles. Here was a tall, graceful and rapid growing foreigner discarded almost universally—and seen now only here and there, forlorn, broken by the winds and desolate. The Newburyport turnpike still possesses a few of what seemed once to have been an avenue, and some hill tops in Essex County are marked in the distant horizon by the taper finger of a single tree of that species. Our beautiful Common paraded files of them on its sides, vegetable sentinels, always at their posts in all weathers. What better emblems too of the military and precise position, and emblematical of the purposes of the parade ground. A single arrowy poplar rising amidst a clump of elms or of other trees is a picture of beauty in arboriculture seen only here and there more by chance than design. May the day be distant when the Lombardy poplar shall become extinct; and we gratefully preserve the record of the “12” individuals with the “12 large leaf” ones, which were found in the goodly company of delicious peaches and noble plums of 1799.

SALEM, 1857.

Capt. NATHANIEL E. ATWOOD, of Provincetown, was then introduced to the meeting, and offered a few remarks relating to the spawning, &c. of certain fishes. He first alluded to some of the peculiarities in the sexes of different kinds of fishes, as difference in weight, also other distinguishing features. The Cod, Haddock, Hake and Pollock were mentioned as examples illustrating various differences in the sexes. He never saw a very large male Cod; Hake and Pollock of the same sex, are marked by the opposite characteristic. He was of the opinion that bony skeleton fishes generally, deposit their eggs before they are fecundated: but he understood that Agassiz had discovered that, in other instances, this was done before depositing the spawn. The Cod deposit their spawn in

November and December, and the Haddock come in afterward, one nest, as you may say, answering for both. He was unable to state when Hake or Pollock spawn, neither did he know of any difference in their condition during the spawning season. Halibut spawn in large numbers at George's Bank, in the months of June and July, and in localities similar to those of the fish before mentioned; there appears to be no difference in their condition at this period, they being equally fat at all times.

Various fishes require different temperatures for living. As summer approaches, the Cod goes off into deeper water. When these fish come upon the coast in the spring, a few are often left about the rocks—and are known as the Rock Cod. The Halibut also comes into shoal water in the spring. The Mackerel appears to be of a different nature; it goes off into deep water, and when it returns in the spring, it is lean and in poor condition; its eggs are deposited before leaving, and when it returns, during the summer to the locality which it left, as is the invariable custom, the eggs are then ready to mature. The Mackerel are fatter, and in better condition, at the latter part of the fishing season. When Mackerel come in, three-fourths of them are males; with Halibut, on the other hand, there is a far greater disproportion of sexes—nine tenths being females, the males being also, much the smallest. He never saw a male Halibut weighing over 60 lbs.; while females weigh from 75 to 200 lbs. Why nature had made such great disparity he did not know.

Capt. A. then proceeded to speak briefly of some of the fishes that spawn in rivers and sometimes proceed to sea, naming, among these, the Shad and Alewife. These come in a little earlier than the Mackerel, and in better condition. Shad and Herring, when they arrive in fresh water and deposit their eggs, are lean and poor and so remain while they are in the fresh water. Salmon begin to grow poor as their eggs develop, which process is very slow. He concluded his remarks by speaking of the Capelan, which differed from the other fish named, in most of the particulars which had been given; they come to the coast at the spawning season, but remain only a

short time. At first none but males come, but these are afterwards joined by a few females—who after depositing their eggs take their departure—the eggs are then fecundated by the males who remain about a week and then leave.

Capt. Atwood's remarks were received with close attention and much interest.

The chair then stated that a vote of thanks to the two gentlemen who had interested the meeting this evening would be but a mere form, and thanked them heartily, in his own, and in behalf of the Institute, for the valuable information they had imparted :

The meeting then adjourned.

*Wednesday, May 13, 1857.*

Annual meeting, this day, at 3 o'clock, P. M. Hon. Daniel A. White, President, in the chair.

The Records of the last annual meeting were read.

The Report of the Secretary was read, and accepted. According to its statement the present number of resident members is three hundred and forty-one;—there are sixty-six correspondent members, who, with eleven honorary members of the original Essex Historical Society, make the aggregate number of our members to be four hundred and eighteen. During the year fifty-seven members have been added to the Institute—ten of the former members have removed from Essex County, four others have retired, and three besides have died. To the memory of the three last, it seems appropriate, that, on this occasion, we should pay a passing tribute of respect: they had all lived to a good old age, and had passed through life retaining the respect and confidence of the community—although their pursuits were not altogether in unison with the objects of the Society, yet they were always very willing to contribute liberally with means and influence to aid us in all our undertakings.

ESSEX INST. PROCEED. VOL. ii 23.

1. **MICHAEL SHEPARD**, son of Jeremiah and Elizabeth (Webb) Shepard, was born in Salem, 4th September, 1785, where he always resided. He died October 10, 1856, after a long and painful illness. He had been one of our most distinguished and successful merchants, and was one of those who knew the true value of wealth and liberally contributed to all objects that are promotive of the good of mankind. Many years will elapse before the void created by his decease will be filled, and long will his memory be cherished in this community as an ardent and sincere friend of all good works.

2. **JOHN WHITE TREADWELL**, son of Jacob and Elizabeth (White) Treadwell, was born in Ipswich, 12th of July, 1785. He moved to Salem in early life, and soon became one of our most respected and valued citizens, widely known in the religious denomination of which for a third of a century he was a conspicuous, hospitable and trustworthy member. A lingering infirmity overclouded his life for many months previous to his decease, which occurred on the 4th of April, 1857.

3. **WILLIAM PICKMAN**, son of Benjamin and Mary (Toppan) Pickman, was born at Salem, 25th June, 1774. In early life he was a merchant in Boston—for many years he has lived in his native place, not immediately engaged in the active duties of life. He was an upright merchant, abounding in commercial integrity, an eminent citizen, though of modest pretensions, and faithful in all his duties. He died on Friday morning, May 1, 1857.

Two of our corresponding members have died—

**DR. JOHN LOCKE**, of Cincinnati, Ohio, who died at that place, on Thursday, 10th of July, 1856, at the age of 65. He had been long distinguished for his zeal and successful labors in many departments of science. His papers in Silliman's Journal of Science were generally on topics connected with Galvanism and Electro-magnetism. A writer in Cincinnati observes of him, "he was an ardent student, a profound scholar, an indefatigable explorer into the causes of things, and a man of pure reputation, of genial nature, and of all the virtues that adorn private life."

WILLIAM PUTNAM RICHARDSON, M. D., of Kendall, Illinois, formerly of Salem. He died on Friday, March 27, 1857, at his residence, after a few days illness. He was a man respected and esteemed by all who knew him, and his memory will be long and pleasantly remembered by many of our citizens and fellow-members. He was a son of William P. and Deborah (Lang) Richardson, born at Salem, August 15, 1813. Educated in our schools, he was prepared for college in the Latin School, and graduated at Harvard University in 1834. He studied medicine with the late Dr. A. L. Peirson, and in 1837 received the degree of M. D., after which he entered the practice here and continued until 1846, when he removed to Kendall, Kendall County, Illinois. There he had been chiefly engaged in horticultural and agricultural pursuits, for which his fine taste and love of natural history peculiarly fitted him. While in Salem he was an active and useful citizen, interested in whatever tended to improve and elevate the community. He was a valuable member of the school committee, and a patron and co-worker in various public institutions. He connected himself with the Natural History Society soon after its organization, and was an efficient officer from that time until his removal from our vicinity. To his exertions and indefatigable industry in the early stages of our corporate existence we are much indebted for our present condition.

During the last Summer and Autumn four Field Meetings were held at Topsfield, Manchester, North Danvers, and Lynnfield. They were well attended and excited considerable interest;—many have expressed a wish that they should be continued the ensuing season. The Evening Meetings have been held with much vigor and activity, commencing at the first of November and continuing on the second and fourth Fridays of each month. Several meetings were likewise held in February and March, to act upon the proposals of the Salem Athenæum for the occupancy of a portion of Plummer Hall. Satisfactory arrangements have been finally agreed upon, and a committee appointed to attend to the duty of removing the

library and collections to that building. This movement will be considered a new era in the history of the Institute. Previous to the final adjustment of the terms a subscription was commenced and the amount of 2680 dollars was raised to defray the expenses incident thereon, this was accomplished mainly through the indefatigable exertions of Hon. R. S. Rogers, who kindly consented to act as chairman of the committee raised for that purpose. Contracts are in process of completion for additional cases and such alterations in the present ones as may be required for the arrangement of the collections.

The first volume of the Proceedings, including the record of meetings, &c., to May, 1856, was printed and distributed during the past season. The second volume bringing the record up to the present time, is now in press.

The following additions during the year may be specified :—

TO THE HISTORICAL DEPARTMENT. Cha's. F. Williams—Russian Musket, from Sevastopol. B. P. Chamberlain—Indian Gouge, from Beverly. J. S. Sibley—a copper spoon taken from the spot on which was formerly a camp of Miles Standish, at Plymouth. Mrs. J. Tannatt—Minerals from Fort Putnam, Andre's dungeon and the place where the chain was stretched across the Hudson, at West Point. E. Pousland—a piece of the submarine Telegraph Cable. S. R. Curwen—several Danish coins. First Church of Beverly, by R. Rantoul—Specimens of continental paper money. Henry Upton—Female necklace, and a fish-hook from Barrows Island, South Pacific. E. P. Sargent—Chinese Note Paper and Envelopes, Bamboo Canes used for pipes, Josh Paper, also two Chinese paintings. James Ward—Idol, spoon, dresses of the chiefs and common people from S. W. coast of Africa. H. M. Brooks—piece of Charter Oak, Hartford, Conn., &c. &c. S. Carlen—Indian arrow head. Mrs. Thomas Cole and Mrs. O. Parsons—Several profiles and engravings. H. S. Pratt—Piece of Birch tree felled by Beavers in the construction of dams. Moses Farmer—Specimens of Gyroscopes.

TO THE DEPARTMENT OF NATURAL HISTORY. *Mammals.*



John S. Ives—*Cavia cobaya*. Charles Chever—*Procyon lotor*. L. R. Stone—*Arvicola* sp. W. C. Alden—*Condylura cristata*. W. C. Barton—*Vespertilio* sp. A. A. Smith—*Vespertilio noveboracensis*. J. C. Howard—*Canis familiaris* var. *Chinensis*, &c. &c.

*Birds.* C. Cook—*Turdus Wilsonii*. R. Brookhouse jr.—*Falco columbarius*, *Rallus virginianus*, &c. &c. Miss S. D. Whittridge—Java Sparrow. Charles B. Haddock—*Fulica americana*. John Price—*Ortygometra carolinensis*. J. S. Shatswell—*Tetrao canadensis*. I. P. Ward—*Buteo vulgaris*. C. F. Putnam—*Bubo asio*. G. A. Perkins—*Mergulus alle*. J. H. Leavitt—Birds from Africa. S. Jillson, of Lynn, Eggs of twenty-three species of birds, collected near Lynn, and the nests of eight species; also eggs and nests, from F. W. Putnam, J. F. Webb, jr., C. Cook, G. F. Austin, J. H. Vent, E. P. Emmerton, and S. B. Buttrick.

*Reptiles.* C. J. Lee and C. R. Waters—*Rana palustris*, *Coluber eximius*, &c. J. F. Webb, jr.—*Rana sylvatica*. A. Page, of South Danvers—*Tropidonotus sipedon*. F. W. Putnam—*Rana pipiens*. J. Wyman, of Cambridge—*Scaphiopus solitarius*. E. S. Thayer—*Chelonura serpentina*. R. H. Wheatland—Several species from Chicopee, Mass. S. Jillson—Several species of Snakes from Lynn. P. D. Allen—*Emys insculpta*. E. L. Perkins—*Salamandra symmetrica*. C. Cook—*Hylodes Pickeringii*.

*Fishes.* R. H. Wheatland—*Catastomus bostoniensis*, *Leuciscus pulchellus* &c. from Chicopee, Mass.;—also, *Salmo fontinalis* (young), &c. F. W. Putnam—*Pimelodus catus*, *Anguilla bostoniensis*, &c. I. P. Ward—*Lepidogaster* from Pensacola, Florida. C. Cook, F. Winsor, G. E. Plander, S. F. Goldthwaite, S. Tenney, C. G. Chever, W. Silver—Specimens of native species. N. E. Atwood, of Provincetown—fifteen species taken near Provincetown. D. M. Balch—*Tetraodon* sp. from St. Helena. S. Woodbury—*Hippocampus* sp. from Bank of Quero.

*Articulates.* W. J. Chever—Insects from Manila and Australia. Charles Derby—Insects and Crustacea, from

Sydney, N. S. W. N. E. Atwood—Crustacea from Provincetown. L. Upton, of Springfield—*Platyphyllum concavum*. J. Dalton—*Tarantula* from Africa. A. Brooks, G. F. Austin, J. H. Vent, Miss Howe, G. F. Allen—Native species of Crustacea.

*Molluscs and Radiates.* R. H. Wheatland—*Holothuria squamosa*. Charles Fraebel, of Cambridge—12 species of native shells. J. L. Russell—specimens of shells from California. Henry Cuming, of London—*Paludomus loricatus*, do. *crenulatus*, do. *Gardnerii*, do. *chelinoides*, do. *Bennettii*. W. J. Chever—Shells from Australia. Mrs. T. E. Payson, Charles Osgood, H. F. Shepard, Mrs. J. D. Treadwell, S. R. Curwen, W. T. Julio, E. P. Sargent—Foreign shells. Joseph True—Several species of native shells. J. G. Anthony, of Cincinnati—*Unio Conradus*, *Io spinosa*, *Io fluviatilis*, *Unio celatus*, &c. C. L. Peirson—Several species of shells from Minnesota. S. Tufts, of Swampscott—A large collection of native shells, and Radiates.

*Comparative Anatomy.* F. W. Putnam—Anatomical preparation of *Bufo americanus*. H. F. Shepard—Skull of *Camelus dromedarius*, *Sphyræna barracuda*, &c. from Zanzibar, Jaws of a Shark. N. E. Atwood, of Provincetown—Skulls of Black fish. Mrs. J. D. Treadwell—Two human skeletons. Henry Upton—Skull of *Uria* sp. Thomas Hunt—Antlers of *Cervus* sp. from China.

*Herbarium.* James Ward—Seed of *Anacardium occidentale*. H. F. Shepard—Ripe buds of the clove *Caryophyllum aromaticum* and specimens of *Ladoicea sechellarum* (sea coco). D. S. Emmerton—Specimens of *Myristica moschata* (nutmeg) and *Coffea arabica* (coffee). A. Page, of South Danvers, J. L. Russell, S. B. Buttrick, J. A. Emmerton, J. C. Lee—Native plants.

*Mineralogy and Geology.* H. J. Pratt—Iron ore from Maine. W. J. Chever—Minerals from the gold mines, Australia. — Davis—Quicksilver ore California. Charles Derby—Minerals collected in Sydney and vicinity. C. L. Peirson—Specimens of minerals and the soil of Minnesota. J.

G. Willis—Malachite S. W. coast of Africa. G. F. Read—Minerals from Lancaster county, Penn., *Pachydomus* sp. Devonian fossil. G. F. Potter—Lava taken in its fluid state from a crater at Hilo, Owyhee also, volcanic glass. William Ives—Fossil encrinurite stems from New York. A. T. Brooks—Fern impressions from Pennsylvania. F. W. Putnam—Trilobites from Braintree, Mass. Amory Holbrook, of Oregon—Fossil wood, Oregon. W. B. Rogers, Boston—Infusorial Earth *Cypris posidonomya*, from Virginia. H. F. Shepard—Earth from Zanzibar, containing fossil *Diatomacea*.

**DEPARTMENT OF HORTICULTURE.** The annual exhibition of Fruits and Flowers took place on Wednesday, Thursday and Friday, Sept. 24, 25, and 26, 1856, at the Hall of the Institute. There was a fine array of Fruits upon the tables, and the Hall was decorated in a tasteful manner, which conferred great credit to the taste and judgment of the ladies and others who performed the work. There was a good display of Flowers particularly of the Dahlias. The vegetables were well represented in the shape of huge pumpkins, potatoes, beets, &c. The exhibition may be considered as one of the most successful of any which has ever taken place under the auspices of the Institute. It was very attractive and fully attended, the halls being crowded every evening and during the day there was no lack of visitors.

**THE LIBRARY** has been enriched by the addition of the following *donations* :

Folios, 35—Quartos, 10—Octavo and lesser fold,	235 — 280
Additions by purchase	- - - - - 25
Pamphlets, about 900—serials, about 1100	- 2000
	<hr/> 2305

The above donations have been received from 104 individuals and societies, and their names are herewith annexed.

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 American Antiquarian Society.  
 Boston Society of Natural History.

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Davis, Timothy, of Gloucester.	Peck, Solomon, of Boston.
Edwards, Richard	Perley, Jonathan jr.
Emerton James	Perley, M. H., of St. John, N. B.
Fearing, Albert, of Boston.	Peirson, Chs. L.
Felt, Joseph B. of Boston.	Perkins, E. L.
Flint, Charles L. of Boston.	Phillips, S. C.
Foot, Caleb	Prince, Wm. H.
Galloup, C. H. of Wenham.	Pope, Henry E., Indianapolis, Ind.
Gavett, W. R.	Pickering, Miss Mary O.
Hickling, Swan & Brewer, Boston.	Richardson, C. Benj. of Boston.
Higginson, George, of Boston.	

Richardson, E. S. L., Kendall, Ill.	Tenney, Rice & Co. of Boston.
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Saunders, Mrs. J. P.	Ward, James.
Sibley, John L. Cambridge.	Warren & Sons, Sacramento, Cal.
Shurtleff, N. B., of Boston.	Washburn, Emory, of Cambridge.
Stone, Alfred	Waters, J. Linton.
Stone, B. W.	Webster, E. O.
Stickney, M. A.	Whito, D. A.
Sutton, Wm., of South Danvers.	Weed, Joseph Dana, of Lawrence.
Stone, John H.	Wilder, Marshal P. of Dorchester.
Stone, E. M. of Providence, R. I.	Worcester, Samuel M.
Shepard, Henry F.	

In closing this report, allusion was made to the good condition of its affairs and the bright prospects for its future success.

The Treasurer's Report was read and accepted.

The reports of the curators were omitted at this time in consequence of the unsettled condition of the collection on the eve of its removal to Plummer Hall,—when duly arranged and catalogued a full and accurate report of the condition of the several departments will be expected.

On motion of Samuel P. Fowler, it was *voted*, that a committee of three be appointed to make arrangements for the Field Meetings of the Institute, during the ensuing year.

S. P. Fowler, L. R. Stone and H. Wheatland, were appointed to this committee.

After some business relative to certain amendments to the Constitution and By-Laws, which were duly passed without any dissent, it was *voted*, to proceed to the choice of officers for the year ensuing. Messrs. L. R. Stone and Robert Manning be appointed to collect, assort and count the votes.

The following were declared elected :

*President*—DANIEL A. WHITE.

*Vice Presidents*—John Glen King, John Lewis Russell, John Clarke Lee.

*Secretary and Treasurer*—Henry Wheatland.

*Librarian*—John H. Stone.

*Cabinet Keeper*—Caleb Cooke.

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*Finance Committee*—John C. Lee, Richard S. Rogers, Ephraim Emmerton.

*Library Committee*—Daniel A. White, David Roberts, Samuel P. Fowler.

*Publication Committee*—John L. Russell, Henry Wheatland, George D. Phippen.

CURATORS OF NATURAL HISTORY. *Botany*—J. L. Russell; *Mammalogy*—F. Winsor; *Ornithology*—F. W. Putnam; *Herpetology*—Charles R. Waters and P. D. Allen; *Ichthyology*—R. H. Wheatland; *Comparative Anatomy*—Henry Wheatland; *Articulata*—C. Cooke; *Mollusca*—Henry F. King; *Radiata*—George A. Perkins; *Mineralogy*—B. F. Mudge; *Geology*—Henry F. Shepard; *Palæontology*—Henry F. King.

CURATORS OF HISTORY—*Ethnology*—J. G. King, W. S. Messervy. M. A. Stickney, F. H. Lee; *Manuscripts*—Henry M. Brooks, L. R. Stone, G. L. Streeter, S. B. Buttrick; *Fine Arts*—F. Peabody, Joseph G. Waters, Alfred Stone.

CURATORS OF HORTICULTURE. *Fruits and Vegetables*—James Upton, Robert Manning, J. Fiske Allen, George B. Loring, Richard S. Rogers, Charles F. Putnam; *Flowers*—John C. Lee, Francis Putnam, William Mack; *Gardens*—John L. Russell, Benj. A. West, Jos. S. Cabot, John Bertram.

*Some Additional Remarks in relation to the Fibres, which compose the Eggshell of Oviparous Snakes — by Dr. D. F. Weinland. See page 28.*

Since the time I wrote on the egg-tooth of snakes, and on the composition of their eggshell from fibres, similar fibres have been observed by Ernst Haeckel, of Berlin, in the eggshells of some fishes, viz: of the whole family of Scomberesocidæ (Exocetus, Tylozurus, Hemiramphus, Scomberesox and Belone.) Also, they have been seen by Mr. Haeckel to originate from cell-like roots, just as we found it in the fibres of the eggshells of snakes. Yet the two are by no means homologous, as it might first seem; for the fibres described by Haeckel are situated inside of the yolk membrane, so as to surround the yolk immediately, while the fibres which I have described compose the chorion that is the outercoating of the egg. D. F. W.

The following List of the Molluscs inhabiting shells, was prepared by Mr. JOSEPH TRUE of this city. Mr. T. has made most minute observations on the localities and habits of this branch of our local fauna, and it has been deemed advisable to preserve such notices as worthy of one of the objects, which the Essex Institute proposes in the records of the natural history of Essex County. No authorities are given by Mr. T. for his nomenclature, he having used the Report on the Invertebrata of Massachusetts, comprising the Mollusca, &c., prepared for the State Survey by Dr. A. A. Gould.

## PUBLICATION COMMITTEE.

SALEM, 1857.

SHELLS GATHERED ABOUT SALEM, MASS., *by* JOSEPH TRUE, *with particular localities designated, and remarks on the species.*

## Spirorbis.

- |                |   |   |
|----------------|---|---|
| S. nautiloides | { | Found on sea-weed, old shells and stones. |
| S. sinistrorsa |   |   |
| S. spirillum.  |   |   |
| S. carinata.   |   | Found in summer on the smaller sea-weed.  |
| S. carinata.   |   | On old shells and stones.                 |

## Serpula.

S. vermicularis. On old shells and wood thrown up from deep water.

## Balanus.

B. tintinnabulum. On vessels bottoms. A foreign species.

B. cburneus. A few specimens, near City Mills, not common.

B. ovularis. Dr. Gould's figure no. 7, I consider the young of *rugosus*, of one year old or less; and figure no. 10 is *rugosus* of two years or less. By a careful study of *Balanus* for twenty years, I have found the species live but two years.

B. rugosus. Between high and low-water mark, abundant.

B. elongatus. Found between high and low-water mark. This shell lives only one year. I have found specimens on the bottom of a schooner, 13 inches long, which grew between April 1st and October 15th, her bottom having been painted on the first day of April.

B. geniculatus. From deep water on shells, decayed wood and stones.

B. — One other species has made its appearance in the City Mill Pond about ten years since; there had not been any before for thirty years. I also found it in Forest River, 1836. It inhabits a little below low water mark, and lives two years only.

#### Anatifa.

A. *lævis*. Found on vessels bottoms. I have known it to grow  $\frac{1}{4}$  of an inch, from April 1st to Oct. 20th.

A. *striata*. On bottoms of vessels.

A. *dentata*. On bottoms of vessels; when alive the peduncle has a granulated appearance—whereas the pedunculo of *lævis* and *striata* is smooth.

A. *sulcata*. Found on sea-weed on all the beaches. I have never found it on vessels' bottoms.

#### Cineras.

C. *vittata*. A few specimens found near City Mills, and on vessels' bottoms.

#### Teredo.

T. *navalis*. Have found three distinct varieties of Teredo; one from Phillips' Beach had a globular shell, the valves closed in front, a small square aperture where it joined the neck of the animal; made a serpentine flattish burrow, and not lined with shell.

#### Pholas.

P. *dactylus*. A single specimen, found in decayed wood at Phillips Beach.

P. *sp.* Found in pieces of wood from the bottom of City Mill Pond. Its shell is furnished with a large dorsal piece at the summit; a line on the outside from summit to base; and near the base a corresponding rib; at the end of which is a ligament, which confines the valves together at the base. This *Pholas* is like species imported in mahogany logs from West Indies; its burrow is not deep, and about twice the length of the shell.

P. *crispata*. Found living at King's Beach in Lynn, nearly opposite the mouth of Stacy's Brook, in hard clay. The specimens were small, the shells from 2-8 to 7-8 of an inch long; shell widely gaping at both ends; a furrow from the summit to the middle of the base, with a corresponding rib inside, a ligament at the end of the rib, which confines the valves together at the base; a tough membraneous epidermis nearly covers the posterior or upper end, forming at the edges of the shell a case for the tubes; tubes connected by a membrane, a small acces-



sory piece of a triangular form, at the summit; the shell itself, thicker at the anterior end, and very thin and fragile at the posterior end, 1-4th to 3-8th of an inch long and so fragile, that the contraction of the animal ruptures them in every direction. In decayed wood at Phillips' Beach, in burrows of eight inches depth, I have found some two and a half inches long.

*Solen.*

*S. ensis.* Found on all the beaches in Lynn and Swampscott, also nearly opposite the foot of Hardy street, Salem.

*Machæra.*

*M. costata.* Plenty on Lynn beaches.

*Solemya.*

*S. velum.* Found on the shores of Salem harbor in South Fields, at Beverly Bar, and at Lynn.

*S. borealis.* Found at Lynn and at Chelsea Beach.

*Glycymeris.*

*G. siliqua.* Found in stomachs of fish at Swampscott.

*Mya.*

*M. arenaria.* Found on all the shores between high and low water mark. It is three or four years old before it is large enough for food.

*Pandora.*

*P. trilineata.* Found in a living state at Point Beach, Swampscott, and on shore of Salem Harbor.

*Osteodesma.*

*O. hyalina.* Found in City Mill-Pond in 1840, two years successively; on the first year they were small and plenty, the next year they were much larger and not so abundant. Found also on Beaches at Lynn.

*Cochlodesma.*

*C. Leana.* Found *living*, at Point Beach, Swampscott; also, at Chelsea Beach.

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NOTE. In one of my rambles at Phillips' Beach, I was much astonished at some burrows made by *Pholas*, in the timber of a part of the wreck of some vessel, that to appearances had laid some years on the bottom of the ocean, and in a furious storm had been cast on shore; the burrows were made in the hard oak timber, not in the least state of decay. The *Pholas* had begun its burrow on the plank outside, and bored through into the timber, diagonally to the grain of the wood. The burrows were about ten inches deep in the timber, their diameter at entrance of timber one inch; at the other end two and a half inches, as far as they reached, but the wood was split off, and the shell gone.

**Thracia.**

*T. Conradi.* Found at Long Beach, Lynn, and Point Beach, Swampscott, and found *living*, at Chelsea Beach.

**Mactra.**

*M. solidissima.* Found on all the Beaches at Lynn.

*M. lateralis.* Found in City Mill Pond, Salem.

*M. ovalis.* Young, in stomachs of fish at Swampscott.

**Mesodesma.**

*M. arctata.* Found on all of the Beaches.

**Montacuta.**

*M. bidentata.* Found in stomachs of fish at Swampscott.

**Kellia.**

*K. rubra.* In summer, on small sea-weed at Phillips Beach.

**Saxicava.**

*S. distorta.* On the Beaches among the roots of kelp.

**Petricola.**

*P. pholadiformis.* At low-water in clay, at King's Beach, Lynn.

**Sanguinolaria.**

*S. fusca.* Found on all the Beaches; and fine large specimens in City Mill Pond, Salem.

**Tellina.**

*T. tenera.* Common on the Beaches.

**Lucina.**

*L. filosa.* *Stimpson.* Single valves; at Point Beach, Swampscott—a dozen or more at that locality, some 2 3-4 inches in diameter.

*L. flexuosa.* Found in the stomachs of fish at Swampscot.

**Cyclas.**

*C. elegans.*

*C. truncata.*

*C. sp.*

} At Leggs-hill pond, Salem.

**Pisidium.**

*P. dubium.* (*Cyclas dubia.* *Gould's Catalogue.*) Found at Leggs-hill pond.

*P. pusillum.* Found in ditches in a field on a farm of Mr. Horace Ware.

*P. minus.* *Cyclas minor* of Dr. Mighels. This mollusk is remarkable for living out of water a long time. I have

known one to live for a month under a loose stone and without water.

*Astarte.*

- A. castanea.* Found at Phillips Beach and at Swampscott.  
*A. sulcata.* Found alive at Point Beach and Phillips Beach.  
*A. quadrans.* Taken from fishes stomach, Swampscott.

*Cyprina.*

- C. islandica.* Plenty at Long Beach, Lynn; the young are found in the stomachs of fishes.

*Cytherea.*

- C. convexa.* Found living, on Chelsea Beach, and at Point Beach, Swampscott.

*Venus.*

- V. mercenaria.* Plenty in City Mill Pond.  
*V. gemma.* Plenty in Mill Pond before the railroad was built, but few to be found since.

*Cardium.*

- C. islandicum.* } Found in fishes at Swampscott.  
*C. pinnulatum.* }

*Cardita.*

- C. borealis.* Found on Point Beach and in the stomachs of fishes.

*Nucula.*

- N. limatula.* }  
*N. myalis.* } Taken from the stomachs of fishes brought  
*N. minuta.* } into Swampscott.  
*N. sapotilla.* }  
*N. tenuis.* }  
*N. proxima.* Found in Salem Harbor and from fish.

*Unio.*

- U. complanatus.* In all the large ponds.  
*U. radiatus.* In Flax and Tomlin's Ponds.  
*U. nasutus.* In Flax Pond, but not plenty.

*Anadon.*

- A. fluviatilis.* Flax and Floating Bridge Pond.  
*A. implicata.* In all the large Ponds.

*Mytilus.*

- M. edulis.* Common on rocky shores.  
*M. pellucidus.* A variety of the last, and found with it.

**Modiola.**

- M. modiolus.** Common on the sea shore among roots of kelp.  
**M. plicatula.** In ditches of the salt marshes.  
**M. discrepans.** Amongst the roots of kelp.  
**M. glandula.** Taken from the stomachs of fishes.

**Pecten.**

- P. Magellanicus.** \*Mutilated specimens at Phillips' Beach.  
**P. islandicus.** One specimen at Phillips' Beach.  
**P. concentricus.** A few single valves at Point Beach.

**Anomia.**

- A. ephippium.** Beaches at Lynn.  
**A. aculeata.** Plenty among the roots of kelp.  
**A. squamula.** On the inside of old shells brought up from deep water.

**Terebratula.**

- T. caput-serpentis.** Taken from stomachs of fishes.

**Chiton.**

- C. fulminatus.** Found among roots of kelp and from fishes stomachs.  
**C. ruber.** On stones brought up by kelp, and from fishes stomachs.  
**C. albus.** From fishes stomachs.  
**C. Emersonianus.** From fishes stomachs; animal inclosed in a sack.

**Lottia.**

- L. testudinalis.** Found adhering to rocks on sea-shore.  
**L. alveus.** Found adhering to rocks, wood, shells and stones; they were plenty in the Mill Pond twenty years ago.

**Dentalium.**

- D. dentale.** Found in stomachs of fish at Swampscott.

**Cemoria.**

- C. Noachina.** Found in stomachs of fishes.

**Crepidula.**

- C. fornicata.** Found adhering to rocks, wood, shells, to the backs of crabs, to the back of *Limulus polyphemus*, and to the backs of their own species : when separated from the thing it adheres to, and laid on its back, just under the surface of water,

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\* Living specimens found in the North River, near Orne's Point—  
 also, at Beverly Bar—Rare. H. W.

the animal may be examined with a magnifier, shewing the tentacula and eyes.

*C. plana.* Found on the inside of old shells.

*C. glauca.* Found near City Mills, and at Phillips Beach.

*C. convexa.* On stones and old shells. This mollusk has the habits of *Lottia*. It is not confined to any particular place. I found a specimen on the inside of a valve of *Petricola*. I put it in water, and during the night it had left the shell, and was adhering to the bottom of the dish.

#### Bulla.

*B. insculpta.* Found in City Mill-Pond.

*B. triticea.* In Mill-pond, and in stomachs of fishes.

*B. obstricta.* In Mill-pond.

*B. Gouldii.*

*B. debilis.*

*B. canaliculata.*

} In stomachs of fishes at Swampscott.

#### Helix.

*H. albolabris.*

*H. alternata.*

*H. striatella.*

*H. arborea.*

*H. electrina.*

*H. indentata.*

*H. lineata.*

*H. chersina.*

*H. pulchella.*

*H. labyrinthica.*

*H. exigua.*

*H. minuscula.*

*H. concava.*

} These species have been found under loose stones, wood and decayed leaves, within half a mile of Great Swamp-meadow, which is situated in the limits of Salem, and some of them have been found in Swampscott and Lynn.

*H. minima.* *True.* sp: nov? An exceeding small species—shell, minute, rounded-conical, smooth apex obtuse; epidermis of a uniform reddish horn color; whorls four, rounded above, and below, with a well defined suture. Aperture rounded, lip simple and thin, umbilicus broad and deep, Diameter about one-twentieth of an inch. If this *Helix* should prove to be undescribed, I would propose the name of *Helix minima*.

#### Bulimus.

*B. lubricus.* Found under loose stones, near Great Swamp.

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*Succinea.*

*S. campestris.* Found among dead leaves and under loose stones.

*S. ovalis.* Found on the edges of ditches and under stones.

*S. avara.* Found under loose leaves in damp places.

*Pupa.*

*P. contracta.*

*P. modesta.*

*P. curvidens.*

*P. exigua.*

*P. milium.*

} All these Pupæ have been found near Great Swamp-Meadow in Salem.

*P. simplex.* An amphibious species. I have found it crawling on the bottom of a brook and under dry leaves, and loose stones.

*Auricula.*

*A. denticula.* Found near City Mills.

*A. bidentata.* I have found them crawling in depressions in salt marsh, where the tide has left them.

*Planorbis.*

*P. lentus.* Plenty in fresh water ditches.

*P. campanulatus.* Plenty at Leggs-hill Pond.

*P. armigerus.* In brooks in Great Pasture.

*P. bicarinatus.* In all the ponds about Salem.

*P. hirsutus.* In Leggs-hill pond and in Flax pond.

*P. deflectus.* In Flax pond.

*P. exacutus.* In Leggs-hill pond.

*P. elevatus.* In brooks and ponds. *Planorbis parvus* of Dr. Gould, is the young of this species.

*Physa.*

*P. heterostropha.* Found in running brooks.

*P. ancillaria.* Found in still ponds.

*P. elongata.* Found in Leggs-hill pond.

*Ancylus.*

*A. fuscus.* Fine specimen in Floating-bridge pond.

*A. sp.* A minute form from ditch in Great-swamp Meadow.

*Valvata.*

*V. pupoidea.* At Leggs-hill pond.

*Limnæa.*

- L. columella.* } Found at Leggs-hill pond, and in  
*L. macrostoma.* } Flax pond.  
*L. elodes.* }  
*L. umbilicata.* } In ditches and brooks in Great Pasture.  
*L. modicellus.* }

*Paludina.*

*P. decisa.* Found in Flax, Spring and Floating-bridge ponds.

*P. heterostropha.* In Spring pond, a single specimen.

*Amnicola.*

*A. porata.* Found in ponds, brooks and ditches.

*Natica.*

*N. heros.* At Salem harbor, and at Lynn.

*N. triseriata.* In City Mill-pond.

*N. duplicata.* In Mill-pond and at Lynn.

*N. clausa.* In fishes' stomach at Swampscott.

*N. pusilla.* Found living, at Swampscott.

*N. immaculata.* Plenty at Swampscott.

*N. flava.* Found in the stomach of a haddock. My shell differs from Dr. Gould's description.

*Velutina.*

- V. lævigata.* } In stomachs of fishes and on beaches.  
*V. zonata.* }

*Sigaretus.*

*S. haliotoideus.* From fishes' stomachs at Swampscott.

*Vermetus.*

*V. lumbricalis.* Cast on shore on the beaches.

*Skenca.*

*S. serpuloides.* Found on the shores of Salem Harbor, just below low-water mark.

*Scalaria.*

- S. Grœnlandica.* } Found in stomachs of fishes at  
*S. lineata.* } Swampscott.  
*S. multistriata.* }

*Margarita.*

*M. cinerea.* Alive at Phillips Beach and from stomachs of fishes.

- M. obscura.* } Found at Swampscott in the stom-  
*M. undulata.* } achs of fishes.  
*M. argentata.* }

*M. arctica.* Found on the shores of Salem harbor.

*Littorina.*

- L. palliata.* } On seaweed between half tide and low  
*L. rudis.* } water.  
*L. tenebrosa.* Fine specimens in City-Mill pond.

*Lacuna.*

- L. vineta.* On the beaches and City-Mill pond.

*Cingula.*

- C. minuta.* Found in City-Mill pond and on the beaches.

*Turritella.*

- T. erosa.* Found in fishes' stomachs, and on the beaches.  
*T. interrupta.* At Point Beach, Swampscott.

*Pyramis.*

- P. striatula.* In fishes' stomachs at Swampscott.

*Odostomia.*

- O. fusca.* }  
*O. exigua.* } Found in the City-Mill pond.  
*O. producta.* }

*Pleurotoma.*

- P. decussata.* From stomachs of fishes, at Swampscott.

*Cancellaria.*

- C. Couthouyi.* From stomachs of fishes, and on the beaches.

*Fusus.*

- F. Islandicus.* Found on the beaches at Lynn and Salem.  
*F. pygmaeus.* Plenty in fishes and on the beaches.  
*F. decemcostatus.* At Phillips Beach, and at Lynn.  
*F. Bamffius.* }  
*F. turricula.* } At Swampscott, from fish and on the  
*F. rufus.* } the beaches.  
*F. harpularius.* }

*Rostellaria.*

- R. occidentalis.* The young of this species, at Swampscott.

*Trichotropus.*

- T. borealis.* At Swampscott from fishes, and on the beaches.



*Purpura.*

- P. lapillus.* On rocks, between high and low water.  
*P. Variety, imbricata.* Fine specimens, around Salem.

*Buccinum.*

- B. plicosum.* Found in City-Mill pond, Salem.  
*B. undatum.* At Salem Neck, and beaches at Lynn.  
*B. trivittatum.* Salem Harbor and beaches at Lynn.  
*B. obsoletum.* Plenty in City-Mill pond.  
*B. rosaceum.* At Point Beach, Swampscott.  
*B. lunatum.* At Phillips Beach among roots and kelp.

*Columbella.*

- C. avara.* Found on the beach at Swampscott.  
*C. Gouldiana.* Found on Phillips Beach among roots of kelp, and near City-Mills in Salem.

*Hiatella.*

*H. arctica.* Found at Phillips Beach among sea-weed, and among *Balanus elongatus*, on the bottom of a schooner from the Grand Banks. I have observed a fine line armed with spines, running from the beak to the posterior end of the shell.

*Friday, June 5th, 1857.*

FIELD MEETING AT SOUTH DANVERS. — This being the first meeting of the season, a large party taking the cars of the South Reading Branch Railroad, at ten o'clock in the forenoon, embraced the opportunity of visiting Ship Rock, and proceeding thence to the place of rendezvous through the woods, or by whatever path fancy or inclination dictated, arrived at the Alms-House, where numerous attentions in the way of guidance to picturesque spots and wild and steep places in the neighboring woods, were rendered by Mr Adino Page. Ship Rock itself, is one of the largest fragments of sienite of a particular formation, which lie scattered round the area of a circumscribed range. Seen from a distance, its sharp outline rises from among the trees and lifts itself visibly high above them. At some no very distant period, a large scaly fragment having detached itself, remains of a

lighter hue than is the rest of the mass, and seems like the white sail of a ship. On the other sides, innumerable crustaceous lichens have deadened the natural fracture and given to the surfaces a gray tint. Above these several kinds of *tripe de roches* (Umbilicariæ) cover with dark and sombre shagginess the gigantic boulder, relieved only by greener tints of mosses where interstices occur. The late Dr. Andrew Nichols regarded this mass as belonging to a series of fragments evidently of a cotemporaneous period, and identical with each other, forming a bed or stratum of only a few miles extent; but broken asunder by some convulsion, which has tossed the pieces in every direction and forced them across the intervening lands, which are bounded in a southerly direction by the greenstone hills of the range over which the Salem Turnpike traverses. It were worth while with this idea in view to examine the immediate vicinity of Ship Rock, and trace in the confused pile of smaller boulders and in the *debris*, the same and identical mineralogical character of the fragments, which of all shapes and outlines lie around the brow of the rising ground on which Ship Rock rests. Amid the crevices and miniature caverns formed by the rude piling together of the several pieces, nothing but the hardiest shrubs and plants can grow; and the explorer penetrating the wilder parts, finds the black birch, the yellow birch, and similar growths struggling for scanty subsistence, out of crevices clothed with rich green and golden tinted mosses, rock ferns, liverworts or perchance the glaucous fumitory, which delight in shady and cool retreats. If diligent and patient and with a good eye on the look-out, he may find in some sterile and scantily clothed patch of vegetable soil among the hair-mosses, the rare and exceedingly curious *Buxbaumia aphylla*, a tiny thing of scarcely an inch in total size, looking like a little brown fungus, but a veritable moss notwithstanding, having for roots a sort of hairy bulb, for stem a short granulated purple stock, with five or six scale-like leaves; surmounted by the oddest capsule so much in

shape like a horse's foot, that some hundred or more years ago, FABRICIUS the botanist called it "Hippopodium;" but HALLER shortly afterward preferred that it should bear the honored name of BUXBAUM, who discovered it in Russia. It certainly sounds much prettier to call it Buxbaum's leafless moss, for so would the scientific nomenclature imply; and "leafless" was it long supposed until that illustrious botanist, Robert Brown, of England, by analyzation of the structure found that the scales which are to be detected upon its stem are veritable leaves. You must look very carefully and may find growing on a space of bare ground your hand could cover, perhaps four or five; if very successful, perhaps even a dozen. We found three only, but the plant is an annual and doubtless many more can be searched for and found close by. Yet all describers call it "rare" and though well known in the northern regions of the globe, still it is "rare," having been seen in three or four localities in Scotland, throughout northern Europe, in Asia and in several parts of New-England and North America.

But there are many other objects beside plants, which are pronounced "rare" requiring only a patient and persevering observation to find them, and often near at hand. Beside the attraction to the curious observer of plants and flowers, the apex of Ship Rock should be attained by means of a safe iron ladder, from which eminence the delighted eye can take in a wide landscape bearing no honored name indeed but of rare beauty, fine glimpses caught of the far off blue ocean and steeped towns and country residences, and dark pine woods and barren hills crowned with loose boulders of respectable size, indicating amidst so much repose, the fiercer epochs when many a crystal lake and lovely pond at their bases were scooped out by grinding masses of superincumbent drift. To one of the loveliest of these small sheets of clear water several of the company partook themselves, through paths in the thick woods, gathering bouquets of the wild flowers, which grew profusely on either hand. An

hour's ramble brought them to the gravelly shores of Bartholomew's Pond, it having neither inlet nor outlet, yet always well supplied with clear pure water, so limped indeed that the queen of the waters the scented white pond lily, scarcely finds any opportunity for establishing itself; and even the water target with its mimic peltate and purple foliage and the finely attenuated-leaved, grassy *Potamogeton* are only occasionally to be seen. There is a tradition that a rare species of some sort of fish was its only inhabitant, small and fitted for the scanty food which its waters supplied; but a mistaken policy introducing the voracious pickerel has extirpated the aboriginal fishy tribes; the more to be regretted as said pickerel are of the most exiguous proportions from like scarcity of food. Some very respectable hornpouts can be drawn from the more muddy parts of the bottom; yet in fishes we deem this little sheet of water rather deficient. At some seasons of the year a considerable margin or beach is to be had for perambulating and investigating its limits, while at others the waters flow closely to the steep and wooded rise of land which hems it in.

In hot summer-days the pretty little yellow flowered hedge-hysop (*Gratiola aurea*) may be seen in abundance among the straggling vines of the cranberry growing between the black stained stones. Even these blackened pebbles and stones are incrustated with vegetation and bear upon their surfaces the pitch colored *Verrucaria umbrina* or some allied species of semi-aquatic lichen. Viewed from the heights of the surrounding cliffs, when scarcely a ripple plays over the surface, the sheet of water reflects the lovely blue sky, or impresses with evanescent beauty the shadows of the trees, or becomes resplendent with the tinted clouds of the evening sky. One of these crags and the loftiest of them, is designated as Prospect Hill, and a not difficult path brings you to a succession of terraced and bare rocky platforms, where the reindeer-moss and other similar lichens renders the surfaces hoary and gray, as with age. At one point and

on the edge of a considerable rocky precipice may be gained perhaps one of the finest views that is to be obtained in the vicinity of Salem. In the rear are distant outlines of higher ranges of hills in New Hampshire, such as Monadnoc and the hills near Petersham or nearer, the rounded summit of Watatuck in this state, or still nearer, the broader structure of Wachuset in Princeton. Towards the south are the lovely blue hills of Milton and the towering column of the monument on Breed's Hill, commemorative of a Nation's birth, and stretched before you for many a mile lies the grand bay of Massachusetts, studded with many a white sail, and bounded by the dim outline of its beautiful capes.

The flowers of this rocky region remind one somewhat of the sterile characteristics of the Alpine heights, and beautiful tufts of fruticulose or brittle but branching lichens, and of the grander foliaceous ones meet you on every side. The loose stones lying like huge lumps of some friable substance, are crumbling beneath the insidious action of their dissolving acids and becomes the soil for scanty grasses or stiff sedgy tufts of vegetation. The hot surfaces afford retreats for the tiger beetles (*cicindelæ*) and for similar insects that love to bask in the sun; and the dungeon crevices of the neighboring hills bear the reputation of rattle-snake dens; a reputation one suspects rather more mythical than literally true.

The *Crotalus* doubtless is to be considered one of our native reptiles, now and then a few specimens being captured or destroyed in the vicinity. But there are periods of the year when these dreaded species do not venture from their retreats, and they who fear to encounter them should embrace such times to visit this elevated spot for the sake of the scenery it affords. An almost direct line may be assumed across the intervening hills from the turnpike which would furnish a delightful ramble for an autumn afternoon. An exploration in other directions of this neighborhood brought to the notice of the party engaged in it many singu-

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lar loose fragments of great size and in various positions. Of these, the large flat one resting upon four rounded supports and known as Chariot Rock, attracted much attention. B. F. Mudge, Esq., who was familiar with these striking peculiarities in the scenery of this region, gave some explanation of the probable manner by which they came to be thus balanced and supported. The abundance of lichen growth upon them all, afforded the ladies excellent opportunity to select beautiful specimens, among which was to be seen the *Cetraria Islandica* or veritable Iceland Moss of the shops. This valuable article was detected by Dr. Nichols so long ago as 1814, as common about our sterile pastures; it has been seen to be more abundant in some places than in others in Essex County, probably owing to some peculiarity of soil. Employed as a mild and demulcent alleviation of inflammation of the throat, it is found to be as valuable as the veritable European form, which "is brought so far and costs so much;" the intense bitter which needs to be washed away from the foreign article being almost wholly deficient in ours.

On return of the several parties, the company were generously entertained by Mr. Page and his family; and at three o'clock, P. M., a formal meeting was held in one of the rooms of the building, at which it was estimated that there were present seventy-five persons, including ladies and gentlemen from Danvers, South Danvers, Lynn and Salem. The company was welcomed by the Vice President, John L. Russell on taking the chair, after which were announced the following donations received since the last annual meeting in May 18th instant, viz:

To the Library—from William Henshaw, Boston; Hickling, Swan & Brewer, Boston; T. Davis, M. C.; J. F. Worcester; S. M. Worcester; Wm. Archer, Jr.; Wm. B. Brown; J. P. Felt; John S. Brown, of Ashby; B. W. Stone; Wm. H. Prince; E. M. Snow of Providence, R. I.

To the Cabinets—from N. E. Atwood, of Provincetown ; L. J. Johnson ; Joseph True ; Joseph Osgood ; Nathaniel C. Robbins.

Letters from several individuals among which one from N. E. Atwood, tendering a specimen of *Cryptocanthodes maculatus*, were read. This fish is called the spotted wry-mouth and is first described by Storer in his Report on the Fishes of Massachusetts, who considered it a species new to the fauna of the State. It is still considered to be rare and the collection of the Institute are under much obligation to Mr. Atwood for his donation.

Geo. D. Phippen being called upon gave a description of the plants collected by his party. Mr. P's acquaintance with their habits, uses, and ornamental value under cultivation render his remarks very interesting. Of these he noticed the occurrence of very beautiful and highly colored *Cypripedium acaule*, and the rare instance of one with a pure white flower:—the forefathers cup (*Sarracenia purpurea*) then found in bud ; the exquisite bog-plant, the *Arethusa bulbosa* representing in delicacy and fragility the orchidaceous plants of the hotter regions of the globe ; the so considered root-parasite on the *Comandra umbellata* with its very long white creeping root stems and its elegant umbels of small white blossoms, loving the loose soil that covers the flat rocks in dry woods : the pale glaucous fumitory (*Corydalis glauca*) well adapted to the garden and making itself a pleasant home in its borders for many years. The following list comprises the other species noticed by the several parties, viz :

*Oldenlandia cærulea*,  
*Hypoxis erecta*,  
*Viola pedata*,  
*Viola blanda*,  
*Aralia nudicaulis*,  
*Hieracium venosum*,

*Trientalis americana*,

*Smilacina bifolia*.

*Smilacina racemosa*.

*Polygonatum giganteum*.

*Uvularia sessilifolia*.

*Uvularia perfoliata*.

*Arum triphyllum*: two varieties.

*Rhodora canadensis*.

*Cassandra calyculata*.

*Quercus prinoides* (Chinquapin.)

*Prunus* spp:

Mr. S. P. Fowler, of Danvers, conversant with the shrubs and trees of New-England spoke at some length on the Oak family, (*Quercus* spp:) and the numerous kinds found in the immediate vicinity. He alluded particularly to his having, that morning, through the instrumentality of Mr. John M. Ives, detected the "Chinquapin Oak," in the woods belonging to the farm of the Poor House and close by. It was in full blossom and its bright yellow tassels attracted their eye. This species is considered as the smallest of the oak family occurring in New-England, seldom growing more than five feet in height, and usually only two or three. Emerson, in his State Report on the woody plants of Massachusetts, says that it is found scattered in almost every part of the State; and on Martha's Vineyard, it occupies, in some instances, many acres together, to the exclusion of almost every thing else. It is also abundant in some parts of Middlesex County. It generally indicates a sterile soil. Mr. F. had not seen it in this neighborhood before. It was subsequently found a few days after, on the same farm, but sparingly. It is a very pretty bush, in the light, shining ashen gray branches, and olive or bronze green younger shoots, with small handsome variously cut leaves polished above and glaucous beneath: the blossoms are conspicuous and showy, the acorns come out from the axils of the leaves: and the entire appearance renders it attractive. It is conjectured from the



bitterness of the bark that it abounds in tannin and might be rendered serviceable by the tanner. It is designated by the botanists, *Quercus chinquapin* and figures of leaves and acorns may be found in Michaux's splendid work on the American Forest trees in plate XI.

Dr. Geo. Osgood, one of the earlier botanists of Danvers described the native habits of several flowers and plants he had collected this forenoon, and eulogised the science which had been the constant source of health, pleasure and instruction through many years. Dr. O's familiarity with the best places to find choice native plants rendered his remarks valuable.

Hon. B. F. Mudge of Lynn, spoke at considerable length regarding the boulders, erratics, and other loose stones noticed this day; also spoke of the scarcity of distinctive minerals in this region; explaining in a plausible theory the origin of the numerous "meres" or ponds so called, found in the bosom of our hills or between ridges of gravel and drift which traverse Essex County.

Mr. F. W. Putnam described the characteristic distinctions between allied families of the frogs—citing the *Hyla versicolor* and the *Hylodes Pickeringii*, which had been captured this morning.

Mr. E. Gay denoted by some remarks his detection of varieties of *Arum triphyllum*

Mr. C. M. Tracy being noticed by the Chair as present at the meeting, kindly explained the origin and pursuits of a local exploring circle in West Lynn, whose object was to describe and illustrate the geological features of that vicinity. He showed several drawings of large rocks, and from his statements it appeared that many singular and peculiar objects had been found in the woods which they had from year to year traversed. Mr. T. in coming to the meeting through the woods and on foot, had noticed a species of *Prunus* which seemed to him unusual and which he presented for consider-

ation. The Chair followed by some general remarks upon the flowers which were spread before him on the table; on the habits of the Lepidoptera as elicited by the presence of a fine species of Moth and its empty Cocoon; on the pearl oyster, of our muddy ponds and rivers (*Unio purpurea*) and other kindred species; and of the worthlessness of such gems among the richer tinted ones of the ocean. A single species of unio has been long known to produce them in Europe since the earlier days of observers, and even they are created artificially by inserting some irritating substance between the substance and living mantle of the animal and the interior surface of the shell.

J. W. Proctor, Esq., of Danvers, being present, took occasion to express his gratification and pleasure at the success of the field meeting of the day, and congratulated the Institute at its happy and instructive mode of imparting knowledge.

A vote of thanks to Mr. Page and family was unanimously passed; after which the Institute adjourned, availing itself of a few moments, time to visit the Institution and a very creditable collection of curiosities made by the gentlemanly Superintendent. On arrival of the evening train, the Company dispersed for their several homes well pleased with the entertainment afforded by the first field meeting of 1857.

*Wednesday, June 24, 1857.*

FIELD MEETING AT MONT SERRAT. The place of meeting being agreed upon that it should be at the farm of Wm. H. Foster, near Bald Hill, in Beverly, through an invitation extended to the Institute by that gentleman, the company were taken over the rail road to a point a mile or two beyond that estate, where the surrounding woods afforded excellent opportunity for rambling in quest of wild flowers, and other objects of interest to those, who sought them; each one

taking his own bent regarding the specimens to be collected. Several hours were thus pleasantly occupied, until three o'clock, P. M., when the Company were called to order by the Vice President, John L. Russell, and the formal meeting duly held. The records of the preceding meeting were read by the Secretary and donations announced.

*To the Library*—from Chas. A. Putnam, James H. Keith, of Cleveland, Ohio.

*To the Cabinet*—from Chas. F. Williams.

Several letters were read ; of these, one from the Hon. A. B. Johnson, of Utica, N. Y., accompanying a donation of manuscripts and letters presented to the Institute by the late JAMES MACAULEY, of Herkimer County, N. Y. Many of these letters were considered very interesting and valuable, having been written by several of the most eminent citizens of the State of New York. The series makes a desirable contribution to the Historical Department. Another from John W. Proctor, Esq., treated of the *smut* of the Onion and of a *maggot*, which attacks that vegetable, threatening serious injury to the onion crops. He considered that at least half the estimated crop of the present season would be lost. This letter was referred to a Committee consisting of Messrs. S. P. Fowler, Geo. D. Phippen, and Henry F. King, in order that it might make the necessary investigation, and report upon the subject at some subsequent meeting of the Society.

Some very pretty fishes taken from a mountain brook in Vermont, and the fresh water lobster (*Astacus fluviatilis*) with some Vermont plants collected by John M. Ives, the present season, were offered by the chair and commented upon. The Chair also exhibited the *Linnæa Borealis*, a lovely native plant found in abundance in the neighboring woods on the Essex road, and spoke of its wide northern range throughout Europe and N. America, of its being a

single and unique species and of its being commemorative of the greatest naturalist; that it was so called by Gronovius the friend and admirer of the illustrious LINNE. This charming forest flower grows in extensive beds and has been successfully cultivated by Stephen Driver, in his garden on Essex street, Salem, a few years ago. The plant also used to be seen in the neighborhood of the Putnam Mills, at North Danvers, but has been lost to that locality for many years.

Geo. D. Phippen exhibited another delicate forest blossom in the sweet scented, pure white and elegant *Mitchella repens*; known familiarly as "two eyes," twin blossoms, and "Love," of which it was finely said by a young lady to whom it was pointed out, "she thought love was never seen." This little plant grows for months under a bell glass if supplied with some wet moss, and becomes an elegant ornament for the centre table of the parlor. It is also well adapted to the Wardian case, in which it thrives. Some large clusters of the Mountain Laurel (*Kalmia latifolia*) of great elegance were produced by Mr. P. and the rock rose (*Cistus canadensis*) or frost plant, so called because the first frosty rime of the coming winter crystalizes upon the detached back of its indurated stems.

Dr. Geo. Osgood showed several plants found by him on his way from Danvers to the place of meeting. Among others were the water plantain (*Alisma plantago*, var., *Americana*) a common and conspicuous plant in ditches and wet clayey places; the Silver leaved five finger (*Potentilla argentea*); the curious aquatic bladder wort (*Utricularia vulgaris*) and the common mugwort (*Artemisia vulgaris*).

Mr. S. P. Fowler, whose occupation suggested the subject, spoke of the occurrence of the Hemlock, (*Abies canadensis*); of its extreme beauty when in any stage of growth; of its elegance when small and young; and then the most graceful of Spruces; of the contrast of the tender and light green twigs and leaves with the richer dark green foliage of the preceding season, of the value of its bark and some of its

commercial relations. The Hemlock Spruce has also been employed for making live hedges ; bearing the shears well and growing compact, thick and ornamental. Mr F. had seen a profusion of trees of this species in his rambles to day.

Mr. C. M. Tracy, contrasted the flowers and plants of this district with those which grew spontaneously in Lynn, showing the differences. The prim (*Ligustrum vulgare*) so abundant there had not been seen by him to day : and the mountain laurel was not to be found to his knowledge about Lynn woods, though so common in Beverly and immediate vicinity.

Mr. F. W. Putnam showed some eggs of the spotted turtle, (*Emys guttata* & *E. picta*) also some wood frogs (*Rana sylvatica*) which had been taken during the forenoon's rambles.

On motion of Mr. Fowler, it was unanimously

*Voted*, that the thanks of the Essex Institute be presented to Messrs. Wm. H. Foster and James Eaton, for the kind attentions which had been shown to the members and their friends on this occasion.

After some general remarks regarding the next place of meeting it was

*Voted*, to accept the polite invitation of Mr. Benjamin C. Putnam of Wenham ; and that the next Field meeting be held at that place : after which the Institute adjourned ; highly gratified with all that was seen and heard with the thrift and management of the farm of their host and at the stock and crops shown on the premises.

*Friday, July 10th, 1857.*

FIELD MEETING AT WENHAM. "A delicious Paradise," says Dunton, who was at Wenham somewhere about 1686 ; "it abounds with all rural pleasures, and I would chuse it above all other towns in America to dwell in. The lofty trees on each side of it are a sufficient shelter from the winds ;

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and the warm sun so kindly ripens both the fruits and flowers, as if the spring, the summer, and the autumn had agreed together to thrust winter out of doors." And at this rural Paradise the third Field Meeting of the season was held, making the Town Hall, the place of rendezvous. The parties were dispersed in different directions and escorted by efficient guides. The shores of Wenham Pond were examined by some ; and the stream, which issues from it known as Miles' River, was sought for by those of piscatory habits. Others and the larger party were conducted to Pleasant Pond, a beautiful sheet of water, bounded by wooded slopes, and flowering dells. It is in this vicinity that many rare New England plants grow, for instances the *Moneses uniflora*, *Clintonia borealis*, *Andromeda polifolia*, *Eriophorium alpinum*, &c.

On return to the Hall at 3 o'clock, P. M., the formal meeting was called to order by Vice President, John L. Russell. The Records of the last Field meeting was read, and donations to the Institute were announced as follows :

*To the Library*—from the American Antiquarian Society at Worcester ; from Messrs. Jacob Batchelder ; D. A. White ; George B. Loring ; Nathan Jones of Wenham.

*To the Cabinets*—from L. R. Stone ; George A Perkins and Mrs. G. R. Mason.

The species of plants collected this day and laid before the meeting were the following :

*Pyrola elliptica*.  
*Pyrola rotundifolia*.  
*Mitchella repens*.  
*Vaccinium macrocarpum*.  
*Arethusa ophioglossoides*.  
*Sisyrinchium anceps*.  
*Hypoxis erecta*.  
*Prunella vulgaris*.  
*Thalictrum dioicum*.

*Cymbidium pulchellum.*  
*Veronica anagallis.*  
*Coptis trifolia.*  
*Nymphœa odorata.*  
*Nuphar advena.*  
*Galium spp.*  
*Myrica gale.*  
*Lysimachia quadrifolia.*  
*Linaria vulgaris.*  
*Orchis, several kinds.*  
*Medeola virginica.*  
*Azalea viscosa.*  
*Kalmia angustifolia, &c., &c.*

Several of these were made the subject of observation by the Chair, who in some introductory remarks regarding the purport of these excursions, alluded to the pleasure which the day had afforded him, especially as he had been conducted through the woods and around the ponds by Mr. Cook, who had often had accompanied the late WILLIAM OAKES, on long excursions and through dense swamps intervening between Wenham and Ipswich, when that naturalist used to search with his collecting box, or else with his gun, for plants or birds and insects, as his tastes might decide for the time. Whole days used to be spent in these wanderings and the riches of this section of Essex County were rendered familiar to him in those departments of Natural Science for which he had an especial delight. Many very singular and rare species had been thus brought to notice by Mr. O., some of which have not been seen since; though probably to be found in localities seldom visited by our naturalists.

A partial Report upon the Subject of the Onion disease was read by Geo. D. Phippen, in behalf of the Committee to whom it had been referred at a previous meeting, as follows, viz :—

“Your Committee appointed at the last field meeting

a fortnight since, to investigate the two chief pests of the Onion bed, take this opportunity to present a partial Report. The short space of two weeks is barely sufficient to enter upon the subject, to do justice to which, an entire year would but suffice. Your Committee can say however that they have traversed the fields infested with these enemies, in company with the owners of the land, have inspected the ravages occasioned thereby and have brought away with them specimens for examination.

1. The first and most injurious of these destructive agents, *viz*: the worm or maggot has long been known to science. (?) It belongs to the dipterous insects or the two winged flies, described we think by Messrs. Kirby & Spence, as *Scatophagi ceparum*, but now known among naturalists as *Anthomyia ceparum*, names indicative of the habits of the insect under our consideration; and may be called the onion flower-fly or perhaps better, onion-plant fly. We have ascertained that the ravages of this noisome insect are observable very soon after the onion seed germinates and begins to grow; and they may be perceived in different plants through the entire season, or until the bulbs have grown to considerable size. Even when no larger than peas as many as five or six maggots are sometimes found in a single bulb. The old onions which have been planted out for seed, are likewise liable to their attacks; and we were informed that it is not uncommon to detect upwards of fifty maggots in one of them.

In a field of young onions, the drooping or prostration of an occasional plant in the rows, and the yellow and dying condition of it, readily indicate the presence of the foe. Examining such as present this appearance, it will be seen that the entire heart of the onion has been eaten out by one or more of these voracious creatures. A similar appearance, is observable throughout the season in other plants of a larger size, although some of them thus attacked may have only lost a few of the outer coats of the bulbs, and notwithstanding this mutilation have grown to considerable perfection during the summer.

We ascertained that this insect spreads itself so rapidly over whole beds and even fields that they soon become worthless; and plowing up the spots for other crops has been resorted to by our Danvers friends. In some cases as in Newbury, we were told, that the onion cultivation has been



almost abandoned. A light soil seems most liable to the greatest havoc from the fly.

The perfect insect looks somewhat like our common house-fly, a little smaller, being about a quarter of an inch long, of a pale-ash color, with black bristles thinly scattered over its body, which has rust-colored markings upon it; its wings are tinged with yellow and buff near the shoulders.

The female-fly deposits her eggs upon the leaves of the plant close to the earth; or more probably pierces the plant and inserts them within the coats of the tender bulb. But however this may be, it is certain that upon hatching the larvæ soon find their way to the heart of the onion and cause its speedy death.

After eating for about a fortnight's time, they arrive at maturity, and undergo their transformation within the bulb, issuing forth at the expiration of about two weeks' more, a perfect insect, the whole process of these several changes being so rapid, that it is computed, two or three generations, may succeed each other in a single summer, as evinced by the different sized maggots found in the same individual onion. The latest broods hybernate in the pupa-state, ready for a perfect life on the return of Spring.

Your Committee do not speak conclusively from personal observations made by themselves as would be requisite, had they sufficient time for patient and careful scrutiny; and in absence of this and similar management, have availed themselves of the experience of others. They have consulted two papers upon the general subject by I. O. Westwood, Esq., Secretary of the London Entomological Society; to be found in the Seventh Volume of the Magazine of Natural History for the year 1834, and in the Seventh Volume of the Gardener's Magazine (London) in which are figures of the insect in its various stages of development. It would be essential to study the minutest characteristics of our fly with that above described, to identify it as the same: but the habits and results seem to be of about the like destructive and pernicious kinds.

In a treatise on insects allied to the onion fly reported to the Prussian Horticultural Society in the year 1830, Burgomeister Borggrave of Bevingen, recommends from his own experience the mixing of charcoal powder with the surface soil of the beds as a prevention to the ravages.

M. Bouche suggested the plan of strewing powdered char-

coal over the bed, in which substance, he states, the female fly will deposit its eggs as readily as upon the plant; if this charcoal dust should be gathered up and destroyed, the larvæ are killed; and such a process has been considered to be the best.

It is also noticed that some raisers have secured good crops by allowing their beds to remain unsown for eight or ten days after they have been prepared; indeed until the weeds have appeared, when if a layer of straw a few inches deep be placed upon the bed, and set fire to, the mischief can be prevented and good results from the ashes of the combustibles. Others have used with good success the scrapings from the blacksmith's hearth. Others recommend a change of the ground upon which to sow the onion, and others have succeeded by planting upon ground previously used for the cultivation of strawberries.

In raising seed, it has been suggested that the bulbs employed be dipped, before planting out, into a puddled mixture of earth, soot and water; or else into oil soap, or into gas water or gas tar, in order to drive away by its offensive smell, the insects; as it is a common opinion that insects shun strong scents, of a volatile character especially.

It appears to your Committee that much efficacy may be expected from the use of charcoal and ashes when strewed upon the land, and from the employment of less animal and putrefying manures, using instead those of a mineral nature. Such suggestions however are to be considered the rather by those interested in the onion crops.

2. As to the second agency found so destructive in the cultivation of the onion your Committee report that the *smut* found growing in the leaves of the onion plant has been examined under the microscope; but the specimens used were so imperfect that no information of a decisive character has been obtained. It is evident that the smut of the onion is a parasitical fungus which originates and develops itself within the cellular tissues of the leaves, looking in some stages of growth like the filaments of a *Botrytis*. It makes its appearance upon the first leaf and descends towards the root, destroying the texture and rendering the leaf spongy and streaked with a black dust. Perhaps then, it may originate from the use of too much putrescent matter in the soil, helped towards development by a peculiar low and damp atmosphere. The use of muscle-bed mud for

culture of onions is well known, but we have not ascertained whether such manuring is liable to the fly or not. An over-manured soil made so by too much putrescent animal or vegetable matters could be treated with lime, ashes or charcoal which by helping to absorb the ammonia would check the fermentary process so favorable to the growing of fungi of every kind.

It would be interesting to ascertain whether this particular species of smut is to be found upon the leaves of the wild garlic, (*Allium canadense*) for it may be, that a more succulent condition of the cultivated plant as in our field onion, may be more susceptible to this disease from the high culture which it obtains. Such parasitic plants destructive to crops, indicate the tendency towards extinction of a particular variety; and the remedy may lie in changing the seed or by inducing some newer form not liable to be thus affected."

The Chair in receiving the report offered some remarks upon the character of parasitical fungi and pointed out the errors liable to be made by their looking quite alike, yet being materially distinct. He introduced to the meeting Mr. John M. Ives, who had volunteered his services as ichthyologist of the party, and whose knowledge of many of our fishes was well known. Mr. I. accordingly spoke at some length respecting the fishes which he had captured.

Mr. F. W. Putnam of Salem, a student at the scientific school followed with a minute description of certain fishes, of which the family of *Ganoids* were particularly specified. He gave the meeting some idea of the classification proposed by AGASSIZ to appear in the first volume of his new work, making it plain by the use of the black board.

The singular appearance and sudden disappearance of the Blue-fish upon our coasts and in our estuaries, during some seasons, and the effect of their visits upon other and smaller fishes, were commented upon, to some length by Mr. Samuel P. Fowler of Danvers.

Hon. Asahel Huntington, who was present, being invited

by the Chair to speak before the meeting expressed his deep interest in the objects of the Essex Institute and closed with some appropriate allusions to the late Mr. Oakes as a naturalist as well as a florist, whom he had known when the latter was pursuing his studies of the law.

Allen W. Dodge, Secretary of the Essex County Agricultural Society, expressed much gratification at the results of the day and occasion, alluding to the Rev. Dr. MANASSEH CUTLER of Hamilton, in terms of high respect. Mr. D. also invited the Institute to visit the town of Hamilton, the place of his residence, whenever it should be deemed convenient to hold a Field-meeting again in this section of the County. He was followed by the Hon. B. F. Mudge of Lynn, who reverted to the classification of Agassiz previously discussed by Mr. F. W. Putnam. Rev. Mr. Chaffin of Danvers, spoke at some length, alluding to the topic of the onion, and to the method of its cultivation.

By motion of S. P. Fowler, it was unanimously

*Voted*, That the thanks of the Essex Institute be tendered to Mr. B. C. Putnam and family, of Wenham, and to other citizens, for their courtesies and attentions during the day.

*Voted*, That the thanks of the Institute be tendered to the Town authorities of Wenham, for the use of the Town Hall.

*Voted*, That the next Field-meeting take place at Manchester, on Wednesday, July 29th, if the weather be favorable. After which the Institute adjourned.

*Tuesday, August 4th, 1857.*

FIELD MEETING AT MANCHESTER. After several postponements on account of the unfitness of the weather, the Institute were successful in the selection of a suitable day to visit this pleasant and picturesquely situated village upon Cape

**Ann.** A locality exceedingly rich in the various objects which contribute to the enjoyment of the lovers of natural history. The weather was charming, and a large number availed themselves of the opportunity to join the excursion party, delighted with the beautiful scenery spread before them on the route. The proximity to Essex woods invited many to bear their steps thitherward, lured by the cool shade, the pleasant road, the multitude of flowers and the sylvan mosses. Many species of the cryptogams engaged the attention, and the beauty of the ferns spreading their delicate fronds profusely about was very attractive. Blossoms of various kinds of shrubs rewarded the patient toil of some, others were laden with Swamp flowers of various kinds.

The sea-shore and the breezes from the ocean lured away many, including the ladies, who explored the ledges, cavernous apertures and rare curiosities with which the shores of Manchester abound. Some were entered by the more adventurous of the party, who had temporary amphibious tastes or who sought to inquire into the origin or mode of construction of these wave-beaten fissures. The grotesque appearance of a very large and old juniper tree was particularly attractive, spreading out like an umbrella in shape and gnarled and twisted in limb and spray. The mineralogists sought in vain for some trophy of their science, content to become interested in trap formations and ancient dikes and porphyries instead.

The High School of Manchester occupies a schoolhouse conspicuously placed upon the brow of an elevation a little way from the thickest settlement of the town. Like the Temple of Learning those who aspire to tread its courts must take several weary and upward steps. Once gained, the eye is delighted, whether the mind be refreshed or not. It is thought that there has been no lack of food for the latter under the guidance of the teachers at that post of duty

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and instruction. It were hard to conceive the opposite condition if there be any virtue in good air and bright sunshine and grand prospect. A more gladsome and cheering landscape and water view could be hardly excelled. And it must be deemed wise in the architects or town authorities, who built the school house, where the children might see the evidences of the Hand Divine thus spread before them like a bright and living picture. This building was tendered to the party for its place of rendezvous. Thither all resorted at high noon attracted by the appeals of hunger or by liberal supply of the coolest of water from a well near at hand. Refreshed and invigorated, the Institute was called to order at half past two o'clock by the Vice President, JOHN L. RUSSELL, taking the Chair. The records of the preceding meeting were read by the Secretary, and donations were announced as follows :

*To the Library*—From James Upton ; John C. Holmes, of Lansing, Mich. ; J. L. Waters, of Chicago, Ill. ; Henry F. Shepard, and John Webster, of Salem.

*To the Cabinets*—From John M. Ives ; George F. Read ; Mrs. Charles M. Richardson ; George A. Perkins ; W. S. Putnam ; Richard Hood, and George F. Chever.

David Roberts, Esq., of the Library Committee, offered remarks at some length respecting the late munificent donation of more than one thousand volumes to the Essex Institute, thus swelling by such repeated gifts the size and value of its Library in works of rare and unusual character. Mr. Robert's Report was duly accepted and ordered to be placed on file. The following Votes were unanimously passed after some complimentary allusion to the venerable donor, from Hon. B. F. Mudge of Lynn and from the chair.

*Voted*, that the letter of Hon. DANIEL APPLETON WHITE, be recorded at length in the records of the Essex Institute

and that his donation of Books be accepted on the conditions contained in said letter.

*Voted*, That the cordial thanks of the Essex Institute be presented to Hon. Daniel Appleton White, for his well timed and valuable donation of books, this day accepted.

The Field meeting of the Institute was then duly discussed by an introductory observation from the Chair, who alluded to the previous one held in this town on July 18, of last summer, remarkable for its intense heat and the perseverance in pursuit of the Magnolia flowers, yet lingering here and there in native haunts. He congratulated himself and the party on the presence of Dr. D. F. Weinland, from Germany, who at present was attending the Scientific School in Cambridge and who afforded him much interesting information on the ferns and plants of Europe, in comparing our own ferns with those he was more familiar with abroad. It afforded him much delight to point out the species of lichens and hepatics as they grew on the trunks of the forest trees, and to be assured that they would be prized and valued abroad as veritable species gathered to day by those interested in diffusing a general taste for such pursuits as led to estimate correctly every object in Nature.

Some pieces of Coral having been presented, B. F. Mudge occupied some time in the natural history of the "Coral insects" so called, describing the nature of the Zoophyte the habits of its existence, the formation of the *corallium*, its economy in geological conditions, in the formation of islands and reefs and other interesting matters connected with the general subject. At the request of Mr. Mudge, Dr. D. F. Weinland spoke in continuation of the same topic, illustrating his views by the use of the blackboard. Dr. W. had lately returned from a voyage to the West Indies whither he had been for the express purpose of studying the living Corals *in situ*. The lectures of these gentlemen were listened to with marked attention.

Dr. George Osgood of Danvers, presented through the Chair a very large acorn of the *overcup* kind brought from Kansas Territory. The mossy and fringed character of the cup was explained by Mr. Russell, who illustrated its mode of growth.

A brief and interesting debate arose on presentation of a piece of bituminous Coal from D. Roberts, Esq., relating to its origin and chemical characters.

From want of time, the usual discussion on plants found to day, was by agreement omitted.

The following vote on motion of B. F. Mudge was unanimously passed :

*Voted.* That the thanks of the Essex Institute be presented to Mr. Jonathan French for his kindness and attention on this second visit to Manchester, and to his pupils for their efforts in its cause, and likewise for the free use of their airy and commodious School House.

An allusion to the life and character of the late Hon. JOHN GLEN KING, was appropriately made by David Roberts, Esq., which resulted in the following unanimously adopted resolves, viz :

*Resolved,* That the members of the Essex Institute deeply deplore the decease of the late John Glen King, one of its Vice Presidents.

[ Mr. King, in early life was called by his fellow citizens to represent them in both branches of the State Legislature. He was one of the founders of the Essex Historical Society, and from 1822 to the union of that society with the Essex County Natural History Society in 1848, under the name of the ESSEX INSTITUTE, and since that period until the present time was successively elected a Trustee, Corresponding Secretary, and Vice President ; twenty three years of which time he



performed very acceptably the duties of Corresponding Secretary to the first named society. In 1836 at the organization of the City Government of Salem, he was elected the first President of the Common Council.]

*Resolved*, That we feel called upon to regret his decease, as a loss to literature and to history, he having been in his lifetime eminent for his classical tastes and attainments, and conspicuous for his uniform devotion to sound literature.

*Resolved*, That these resolutions be entered upon the Records, and that a copy be communicated to the family of the deceased as a token of our sympathy in their bereavement.

After some remarks from the Chair it was

*Voted*, That the next Field-meeting take place at West Lynn, on Wednesday, August 26th, if the weather permit, otherwise on the first suitable day.

*Voted*, to adjourn.

*Wednesday, August 26th, 1857.*

FIELD MEETING AT WEST LYNN. The School-House in Ward Seven, at Tower Hill, near the Alms House was selected and offered by the local Committee for the place of meeting. It is pleasantly situated, commanding a fine view of diversified landscape from the meandering of the creeks of the salt-marshes just below, to the distant elevations and the surrounding far stretching sea. The "Lynn Exploring Circle" consisting of several gentlemen interested in gathering information of value relative to the vicinity of Lynn, in its botanical, geological and scenical features, acted as the guides to the party. A large portion of the Company alighted from the 8 o'clock train at West Lynn, from which station they were conducted by a very pleasant route to "Dungeon Rock," the course laying mostly through the woods. This unfrequented way led to much scrambling over hills and sun burnt rocks, and as party after party,

which had taken different directions, met near the common point of destination, the effect was pleasing to the spectator in the rear. The hot air, the scorching sunshine and the panting pilgrims, rendered the occasion one not to be soon forgotten, and many were the congratulations at the final meeting on the high bluff of rocks, which was indicated from afar by the signal staff on its summit.

Our course, by the courtesy of several adepts in the knowledge of rare spots, was to Pine Hill, commanding an extensive view. We noticed many fine crustaceous lichens; but want of time, and lack of tools to collect, compelled us to have but a scanty glance at them. It is singular how confined to certain places are some of these plants, as for example, *Parmelia chrysoleuca*, abundant in some tracts near Salem and very sparsely observable in others. It may be, that the geological character of the rock may have much to do with this, a point worthy of study in relation to the species to be met with in Essex County. The agile step, the ease of motion upon the looser fragments of *debris* over which we passed showed how accustomed to such exercise, were our guides. We were informed that occasionally the "Exploring Circle" devoted a long, entire day to wide and extensive rambles in quest of the remarkable boulders, so abundant in this section of the county; and that they possess many sketches and drawings of curious shaped rocks, they have met with in the woods, seldom visited or seen by anybody except those whom chance or clearing off the wood now and then, brings there. Some of these remarkably poised fragments amidst the wild, almost primitive scenery, transport one for the moment to wild passes in mountain regions, forgetting how near he is to the ocean, whose roar could be heard above the murmur of the forest in the autumn storm.

Our course led us by the margin of Breed's Pond, skirting its tangled shores to the detriment of clothes unless of the strongest texture, such indeed as is only fitted for such ser-

vice. This sheet of water lies peacefully near to the Dungeon Rock, and helps to render picturesque a spot famous for legendary lore, for which the curious reader is referred to Lewis's History of Lynn, there to find a story related of certain pirates who about the year 1658 visited this place for purposes best known to themselves, and desecrated a lovely valley or ravine near by, by its name ever since borne as "Pirates Glen."

The present resident at the "Röck" is a Mr. Marble, who under the so called "spiritistic" direction has diligently excavated the solid rock in search of treasure concealed. The cavern is certainly worth visiting, though extremely like all such artificial excavations made by continued industry and blasting by gunpowder. Many such, are well known as old but ill conceived mines, supposed to contain gold or silver or copper at the very least, and what renders the "Dungeon" so peculiar is, that it is a modern problem now in solution. In the sixty-ninth issue of the Salem Gazette for the year 1857, can be found a very interesting notice, somewhat extended in detail, of this extraordinary undertaking, which it would be well to consult, as bearing on the historical interests of the day and prepared by one of the party accompanying the field meeting.

After sundry refreshments and bountiful quaffings of cold spring water, the various parties found themselves ensconced in the fine, airy room of the School house, where at half-past three o'clock, the Vice President, J. L. RUSSELL, being one of several, strayed out of the way and well drenched with perspiration but laden with plants, called the meeting to order on assuming the chair. To him the day and all things were propitious, felicitating himself on meeting with his escort, who so well knew what to exhibit in way of his tastes; and thanking others for their courtesies towards their guests. The Records of the last Field meeting were called up and read by the Secretary; and donations announced as follows, viz:

*To the Library*—From D. A. White ; Jonathan Perley, Jr. ; and L. A. H. Latour of Montreal, Canada East.

*To the Cabinets*—From Dr. Geo. Osgood, of Danvers ; Benjamin Grover, and R. H. Wheatland.

Several new members from Lynn were also elected.

As the customary attention to plants found during the day had been postponed at the last Field meeting on account of press of other business, the Chair called upon GEORGE D. PHIPPEN to offer to the meeting his observations in that line this morning. Mr. P. then showed the spoils of his herbarizations. Of these he indicated noble specimens of *Lobelia cardinalis*, a plant so fine and showy as to have been considered worth cultivating for the flower gardens, in England, for more than two hundred years. These specimens with gigantic instances of the Thoroughwort (*Eupatorium perfoliatum*) he found most plentifully in a meadow into which he with some others of his party had unconsciously strayed and discovered themselves cut off for a while from the residue of the Company, but rescued by the exertions of Mr. C. M. TRACY.

Some parasitical plants known as Indian pipe and pine sap (*Monotropa uniflora* & *M. hypopithys*) and the deer grass (*Rhexia Virginica*) also were brought forward. The ground-nut (*Apios tuberosa*) with its necklaced roots, sweet and nutritious in the diet of the aborigines and with its chocolate colored blossoms smelling like violets and mignonne, and which Mr. P. declared furnished food and sustenance to the early settlers also, a plant to be cherished more than it is for gratitude one would suppose, besides being so pretty in the garden ; the Fire weed (*Epilobium angustifolium*) so handsome with its tall spikes of purple blossoms, like some phlox, though a veritable relative to the primrose : the Hog pea-nut (*Amphicarpa monoica*) resembling the pea-nut of Commerce in burying its seed vessel under ground : the

rattle snake plantain (*Goodyera pubescens*) with such exquisite tessellated foliage; the naked flowered *Desmodium* and the rarest plant found to-day the Adam and Eve, or *Aplectrum hyemale*, of the orchis tribe also onecited and exhibited.

Messrs. Putnam of Boston, and Edwards of the State Normal School in Salem, offered some remarks relative to the engagements of the day, and the pleasure the excursions had afforded them.

HENRY MILES, of Monkton, Vt., being present offered some theory of his relative to certain observations made by him in the geology of that State. Mr. Mudge participated in the discussion, and saw no essential differences in the formations from those described in other parts of the world, giving his reason for so-thinking.

The importance of securing all prominent places such as High Rock in Lynn, against their passing into private hands by making them forever public property was urged by several; the Chair regretting that on a visit to that eminence which overlooks the City and Massachusetts Bay, he found himself in the position of an intruder, the access being through a gateway and that strongly padlocked. To claim ownership to such spots seemed like claiming a fee in the blue sky or other similar extensive prospects. After a desultory conversation from Messrs. SAVAGE, CUTLER from Ohio and F. W. PUTNAM on various subjects before the meeting, a vote of thanks was passed to the School Committee for the use of the School House, to the authorities of the City of Lynn, to the members of the "Exploring Circle," to Hon. B. F. Mudge and wife, to Mr. John Chamberlain the Superintendent of the City Almshouse, to the Principal of the School and to other citizens of Lynn for the courtesies which had been extended, it was voted to adjourn.

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Wednesday, September 16, 1857.

FIELD MEETING AT HAMILTON. A charming morning ushered in the festivities of this day to be found by the multitude in the fields and woods. Many were the folks, young and old, who took the quarter past eight o'clock Eastern Railroad train from the Salem depot. Others came later, by the fifteen minutes past one o'clock train, and all as they arrived were welcomed by the good people of this beautiful village. Abundance of teams were in readiness to convey the lame, the weak and the weary, or those who preferred other locomotion than their own, to such spots and places as fancy or whim dictated. The anglers, the herpetologists and such kin were transported to nearest ponds and brooks, and the flower-seekers were conducted to spots which promised something in that line. For matters pertaining to antiquities and civil history, some betook themselves to the grave yard, rich with "storied" slab and tomb stone recounting the precious memories of sainted and departed worthies. We took up our line of observation in a neighboring swamp and thicket, where we found the lingering traces of the floral year. Introduced to a gentleman who seemed remarkably familiar with the names of local medicine plants or *herbs*, we spent the morning in mutual surprises and instruction; each imparting to the other some new fact. The fragrant *Solidago odora* was now in perfection and many beautiful asters enlivened our walk. The benjamin or benzoin bush, (*Benzoin odoriferum*) skirted the wet and ditchy edges of the swamps and gave out delightful fragrance. The seeds were ripening into little red plums, which when gathered and dried are used by many people somewhat as cloves or annis-seed or cardamons are, as fit to chew and sweeten the breath. A strong spicy taste they impart to the mouth, certainly less harmful and more gustatory than the same quantity of Tobacco. From this spicy, warming quality, common to all parts of the shrub, it has

obtained the name of spice-bush, wild allspice; and from some fancied virtue, it honorably is possessed of the name of Fever-bush, it maintains itself too, as one of many condiments in Spring-beer making, and we have known its use as a bath by infusion for a poisoned skin. Its beauty and the lustre of its leaves we suspect have served to create for itself friends, who in their indiscriminating admiration attribute cooling and warming properties to its several parts. Certainly no native shrub looks so pretty rising as it does out of the black muddy soil of its native place of growth, with its roots bathed in the cold spring water in which they delight. We are however informed by Dr. CUTLER that "the Indians esteemed it highly for its medicinal virtues," which may be authority enough with those, who esteem Indian curatives as particularly valuable.

The Snakeweed or American burnet (*Sanguisorba Canadensis*) with its tall, handsome plummy spike of pure white flowers and its broadly spreading pinnate leaves was conspicuous in the wetter portions of the meadow, and a few blossoms of the fringed gentian (*Gentiana crinita*) gave evidences of the approach of frosts and cold. To MR. ANNABLE we feel indebted for a pleasant morning's ramble and for much information concerning the "Simples" of popular use in medicining.

The Chapel of the Congregational Church having been generously offered as a place of meeting, at 3 o'clock, P. M. the Institute was called to order by Vice President RUSSELL as Chairman, who opened the meeting with some remarks suggested to him by the time and the occasion. He stood on the spot familiar to the loved and venerated CUTLER, who may be considered the Father of New England botany. He had often looked with much satisfaction on the portrait suspended in the Herbarium room of the Essex Institute, rude in design and unfinished, but yet bearing a resemblance to the lover of plants and forest trees, with which he stored his

garden and surrounded his mansion which stood close by this spot. The site of the garden had been shown him, but the pride of the grounds had, alas! vanished, and no loved and cherished tree lingered to tell of the curious hand, who planted it. Still the village of Hamilton is the Mecca of the botanists of Essex County, who will never cease to wonder at the patience of the country clergyman, with only a scanty library and Linnæus' *Genera Plantarum* and similar early European Works, who worked out the "Account of indigenous vegetables, botanically arranged, growing in this *Part of America*, to be found in the first volume of the Memoirs of the American Academy of Arts and Sciences for the year ending in M,DCC,LXXXIII. The botanical books of that precious library can be now only here and there seen, as they were accidentally deposited in some public collection, of which the Essex Institute owns one, through the liberality of FRANCIS PEABODY, Esq., and that, LIGHTFOOT'S *Flora Scotica*, a work of much merit, published in London in 1771. The Chair also alluded to a herbarium-ticket in the handwriting of Dr. Cutler presented to him by an eminent botanist of his acquaintance, as a precious memento, in his estimation, of Dr. C's memory and early labors in natural science. Very pleasant anecdotes were also kindly communicated to him by residents of Hamilton, which helped materially to make this occasion, one, which he should mark with a red letter as peculiarly felicitous.

At the close of the introductory remarks from the Chair, the proceedings of the last meeting were read by the Secretary, and the donations were announced as follows, viz :

*To the Library*—from N. J. Lord ; Smithsonian Institution ; William M. Scribner, of Boston ; A. F. deLacerda, of Bahia, Brazils ; T. P. Shepard, of Providence, R. I. ; Elliott Society of Natural History, of Charleston, S. C. ; Miss Mary C. Anderson ; Charles W. Felt.



*To the Cabinets*—from W. T. Julio ; Joseph Farnum, jr. ; J. B. Curwen ; S. R. Curwen ; Rev. Pliny Fisk ; O. C. Marsh ; Israel P. Williams.

Several new Resident Members were then duly elected.

DR. GEORGE OSGOOD, of Danvers, spoke at some length and in an interesting manner of Rev. Dr. Cutler, with whom he had been on terms of friendship and intimate acquaintance.

The Secretary, DR. H. WHEATLAND, read a letter from Henry B. Osgood, of Whitinsville, Worcester County, describing an improved fruit basket ; a model of which accompanied the letter and was exhibited and explained to the meeting. It consisted of a box so suspended by elastic strings within a wooden frame that frequent jarring in transportation would not materially affect the ripe fruit contained in it. The plan seems well designed for the smaller fruits, as berries and raspberries which are sometimes sent to great distances, and are liable to be bruised and injured.

The remainder of the session was mainly occupied by a discussion introduced by some gentlemen present respecting the common notion that snakes swallow their young offspring in case of danger. Many asserted facts were adduced to support the theory, and much theory was brought forward to bear upon or against the notion. Messrs. Peter M. Neal and B. F. Mudge, of Lynn, Jacob Batchelder, Dr. Isaac Colby, Samuel Preston of Danvers, Allen W. Dodge of Hamilton, and John M. Ives, of Salem, spoke on the subject. It created much excitement and many singular relations were made, touching this topic.

TEMPLE CUTLER, of Ohio, presented to the Institute some Mss. of his grandfather the late Rev. Dr. Manasseh Cutler, many of which were copies of rare books, probably too scarce and costly to be otherwise possessed, and among others was a meteorological record for several years of his own observation.

GEORGE D. PHIPPEN offered a few remarks upon the character of the autumnal flowers as distinguished from those of Spring; and he was followed by C. M. TRACY of Lynn. Mr. P. exhibited to the meeting a specimen of the *Beech drops* found this day, known to botanists as *Orobanche Virginiana*. It was then unanimously

*Voted*, That the thanks of the Essex Institute be presented to Mr. Temple Cutler for the donation received this day, of several Mss. of his grand sire the late Rev. Dr. M. Cutler, of Hamilton, relating to his observations in botany and meteorology.

*Voted*, That the thanks of the Essex Institute be presented to the Committee of the Congregational Society for the use of their Vestry to hold this meeting.

*Voted*, That the thanks of the Essex Institute be presented to Hon. Allen W. Dodge, Daniel E. Safford and other citizens of Hamilton in providing carriages, guides &c., and in rendering other offices of kindness to us on our visit to this town.

*Voted*, to adjourn.

*Thursday January 14, 1858.*

Evening Meeting at half past seven o'clock—Vice President, Rev. John L. Russell, in the Chair.

Records of the meeting at Hamilton read and donations received since that time were announced viz:—

*To the Library*—from L. A. H. Latour, of Montreal, C. E.; B. W. Stone; O. C. Marsh, of Lockport, N. Y.; Charles T. Brooks, of Newport, R. I.; American Antiquarian Society; George Folsom, of New York, N. Y.; Samuel A. Green, of

Groton ; Elliott Society of Natural History, at Charleston, S. C. ; George F. Chever, Massachusetts Legislature ; C. W. Upham ; Francis Peabody ; John L. Sibley, of Cambridge ; Stephen B. Ives ; Montreal Society of Natural History ; E. M. Stone, Providence, R. I. ; James Kimball ; Trustees of Boston Public Library ; Henry Stone, of New York, N. Y. ; J. C. Holmes, Secretary Michigan State Agricultural Society ; City of Boston ; Thomas Trask ; I. A. Lapham, of Milwaukee, Wn. ; George B. Jewett ; Mrs. N. D. Cole ; John H. Stone ; Charles F. Carney, of Boston.

*To the Cabinets*—from Moses Porter, of Danvers ; Charles F. Williams : Samuel Jillson, of Feltonville ; B. F. Mudge, of Lynn ; Haskell of Marblehead ; George A. Perkins ; D. F. Weinland, of Cambridge ; F. W. Putnam ; W. H. A. Putnam ; John Burchstead, of Hamilton ; William Prescott ; James M. Barnard, of Boston ; Richard Wheatland ; James Emerton.

Letters were read from F. Harrington ; W. Prescott ; S. Lincoln, of Hingham ; J. W. Thornton, of Boston ; S. R. Masury ; J. W. Proctor, of South Danvers ; Miss K. E. Prince ; C. B. Norton, of New York, N. Y.

The Chair alluded to the fact of this being the first regular meeting in the new suite of rooms to be occupied by the Institute in PLUMMER HALL. By rare good fortune and extraordinary care, the entire collection of the Cabinets had been removed with safety, and were being arranged in their appropriate places. The new arrangement would suffice for a while, but it is evident that the increase from year to year would soon demand other apparatus. Such zeal among members, who reside abroad, or whose commercial pursuits cause them to visit foreign countries, is seldom elsewhere seen ; and the collection becomes rapidly rich in valuable specimens. A system of exchanges too, works admirably and to our advantage. The Institute's correspondence is exten-

sive and profitable. The attention should now be directed to our native specimens, and great numbers of every sort, however common, should be carefully collected every season. It is to be hoped that our field meetings will be conducive to this end, and that no opportunity will be allowed at such times to secure specimens; encouraging those resident in the several towns we visit, to collect for us. Such a mode would advance the interest of the Institute and promote a taste for natural science, indeed for pursuits similar to these, which engross us all. A word too on the herbarium. A series of shelves and drawers has been constructed for this important portion of our collection. It will quite occupy these and be so arranged as to be readily consulted. The native plants are very desirable; also their seeds, woods, and fibres. A suite of algæ, lichens, mosses and ferns are in progress, and such fungi as can be procured. These latter are deserving attention, especially as so many of them affect vegetation. Specimens from abroad will also be acceptable especially gums, fibres and grains or preparations used for food in other countries. Seeds and seed vessels are readily collected and are of much importance. Our collection is already rich, but we wish it to become richer yet. Specimens of new garden flowers should be saved for the herbarium; from year to year there being some novelty introduced. Let nothing that is vegetable escape some one's care and the result will be propitious. Those, who cannot offer any such, may be able to present some engraving, drawing or illustration of flowers and fruits of great future value for consultation.

In connection with this subject the Chair presented a paper, containing a list of plants collected by Mr. S. B. BUTTRICK of Salem and by several members of a botanical class in Danvers, during the past season, in Salem and its vicinity. It was the result of Mr. Buttrick's researches in the flora of the vicinity of Salem, of which the mention of a promise to prepare the same may be found on page 173 of

this volume of these Proceedings. The importance of such Catalogues of our native productions will be seen, if we consider that exact localities are found to afford particular species for many, indeed for indefinite, series of years. The Chair instanced the value of similar records in reference to plants noticed by the early botanists of Salem, and which he found growing on spots indicated by them. To the future antiquary it may afford satisfaction to know what was the most obvious flora of the present day; and when the progress of cultivation shall have extirpated these wild flowers, their memory at least will survive.

TO REV. JOHN LEWIS RUSSELL, VICE PRESIDENT OF THE ESSEX INSTITUTE.—Agreeable to your request, I have made the annexed list of plants, found in Salem, and within seven or eight miles of Salem; (all, with two or three exceptions native, or growing wild)—the present year, either by myself or other members of the Institute—to which I have added eighty-one plants reported by Miss Ann L. Page, a member of a class engaged in the study of Botany in North Danvers, which I had not previously seen, or had reported by members of the Institute.

I have prefixed a \* to those furnished by Miss Page and a † to those reported by members.

The list is not so full as it would have been if other duties had not required my time at the proper season for procuring them.

To Miss A. L. Page and her associates I feel much indebted for their contributions.

S. B. BUTTRICK.

SALEM, 6th Nov. 1857.

January,—*Alnus serrulata*—common alder aments  $1\frac{1}{2}$  inch,  
*Salix eriocephala*—Swamp Willow aments 5-8 in.

March 27—*Hepatica triloba acuta*—Liverwort.

*Ictodes foetidus*—Skunk Cabbage.

April 4th—*Sanguinaria Canadensis*—Blood Root.

*Populus tremuloides*—Aspen.

*Houstonia coerulea* } Fairy flax, Innocence.  
 } Bluett, Venus' Pride.

*Equisetum arvense*, (barren)—Horse Tail.

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- April 4 *Gnaphalium plantagineum*—Mouse ear.  
*Saxifraga vernalis*—Early Saxifrage.  
 \**Saxifraga Pennsylvanica*—Pennsylvania Saxifrage  
 " 27 †*Acer rubrum*—Red Maple.  
 " 28 †*Leontodon taraxacum*—Dandelion.  
*Erythronium Americanum*—Adder's Tongue, or  
 Dog-tooth Violet.  
*Populus grandidentata*—Silver-leaf Poplar.  
 May 1 *Viola ovata*—Spear-leaved Violet.  
*Ribes trifolium*—Wild Gooseberry.  
*Pyrus ovalis*—Swamp Pear.  
*Potentilla simplex*—Cinquefoil, Five Finger.  
*Fragaria Virginiana*—Wild Strawberry.  
*Caltha palustris*—Meadow Cowslip.  
 †*Aquilegia Canadensis*—Wild Columbine.  
 †*Epigæa repens*—Trailing Arbutus.  
 " 6 *Arbustus Uva Ursi*—Mountain Cranberry.  
*Comptonia asplenifolia*—Sweet Fern.  
 \* *Viola palmata*—Hand-leaved Violet.  
 \* " *pedata*—Bird's-foot "  
 \* " *sagittata*—Arrow-leaved "  
 " 8 " *blanda*—Sweet-scented white "  
 \* " *rostrata*—Long-spurred "  
 \* " *rotundifolia*—Round-leaved "  
 " " *lanceolata*—Spear-leaved "  
 " 18 " *cucullata*—Hood-leaved "  
 " 6 *Anemone nemorosa*—Wind-flower.  
 " " *Thalictroides*—Rue-leaved Anemone.  
 " 7 *Potentilla sarmentosa*—Running Cinquefoil.  
 " 10 *Panax trifolium*—Dwarf Ginseng.  
*Menyanthes trifoliata*—Buck Bean.  
*Uvularia sessilifolia*—Bellwort.  
 †*Persica vulgaris*—Peach.  
*Cerasus sylvestris*—Cherry.  
 " 14 †*Rhodora canadensis*—Canadian Rhodora.  
*Vaccinium Pennsylvanicum*—Low Blueberry.  
*Ranunculus bulbosa*—Buttercups.  
 \**Stellaria media*—Chickweed.  
 " 16 *Thalictrum dioicum*—Epauettes.  
*Geranium maculatum*—Cranesbill.  
 " 18 *Uvularia perfoliata*—Perfoliate Bellwort.  
*Arum triphyllum* } Indian Turnip.  
 } Dragon Root.

- May 18**    *Convallaria bifolia*—Two leaved Solomon's Seal.  
                "      trifolia—Three leaved do do.  
**" 22**      \**Trillium cernuum*—Nodding Trillium.  
                *Pedicularis Canadensis*—Lousewort.  
                *Andromeda calyculata*—Water Andromeda.  
                *Plantago lanceolata*—Ribwort.  
                *Smilacina stellata*—Star Flowered Solomon's Seal.  
                †*Nuphar advena*—Yellow Water Lily.  
**" 24**      \**Coptis trifoliata*—Goldthread.  
                *Aesculus hippocastanum* Horse-chestnut.  
**" 25**      *Lathyrus maritimus*—Marsh Pea.  
                *Chelidonium majus*—Celandine.  
**" 27**      *Convallaria multiflora*—Many Flowered Solomon's  
    [Seal].  
                *Myrica cerifera*—Bayberry—or Wax Myrtle.  
                *Trientalis Americana*; Chick Wintergreen.  
                *Sisymbrium amphibium* } Amphibious or Winter  
                *Barbarea Vulgaris*      { cress.  
                *Trifolium procumbens*; Yellow-clover.  
                \**Cardamine Virginica*; Virginia Water-cress.  
**June 1**    *Iris versicolor*; Blue Flag.  
                \**Laurus benzoin*; Fever Bush.  
                *Crataegus crus galli*; Thorn Bush.  
                \**Veronica arvensis*; Small Speedwell.  
                *Aralia nudicaulis*; Sarsaparilla.  
                *Ranunculus recurvatus*; Wood Crowsfoot.  
                *Prunus obovatus*; Dwarf Choke-cherry.  
                *Berberis vulgaris*; Barberry.  
                †*Krigia Virginica*; False Dandelion.  
                *Corydalis glauca*; Glaucous corydalis.  
                *Robinia hispida*; Rose Acacia.  
**" 2**      *Cornus Canadensis*; Dwarf cornel.  
                *Sisymbrium anceps*; Blue Eyed Grass.  
                *Prunus Virginiana*; Wild-cherry.  
                "      borealis; Northern Wild-cherry.  
                *Trifolium pratense*; Red-clover.  
                *Cypripedium acaule*; Red Ladies Slipper.  
**" 3**      *Cochlearia armoracia*; Horse Radish.  
**" 4**      *Andromeda polifolia*; Water Andromeda.  
                "      paniculata; June or Pepper Bush.  
                *Prunus maritima* } Beach Plumb.  
                or littoralis }

- June 4, *Glechoma hederacea* } Ground Ivy or Gill-  
*Lindernia pyxidaria*; common *Lindernia*. } run-over-the ground.  
*Leucanthemum vulgare* } White Weed Ox Eye  
} Daisy.  
*Sarracenia purpurea*; Side Saddle Flower.  
*Trifolium repens*; White-clover.  
*Rumex-acetosella*; Sheep Sorrel.  
*Osmunda cinnamomea*; Tall *Osmunda*.  
“ 5 *Arethusa bulbosa*; Bulbous *Arethusa*.  
*Arethusa ophio-glossoides*; Adders Tongue.  
*Potentilla argentea*; Silvery cinquefoil.  
“ *floribunda*; Bushy *Potentilla*.  
*Viburnum dentatum*; Arrow-wood.  
†*Heracleum lanatum*; Cow Parsnip.  
“ 9 †*Actæa alba*; White *Actæa*, Bane Berry.  
\* “ *rubra*; Red “ “ “  
*Senecio aureus*; Meadow Marigold.  
*Solanum dulcamara*; Woody Night-Shade.  
\**Geum rivale*; Water Avens.  
*Veratrum viride*; White Hellebore, Indian Poke.  
“ 10 \**Cornus paniculata*;  
*Hypoxis erecta*; Star of Bethlehem.  
*Medeola Virginica*; Cucumber-root.  
*Cornus circinata*; Round-leaved Cornel.  
“ *alternifolia*; Alternate-leaved “  
“ *alba*; White-leaved “  
*Eriophorum polystachyon* } Broad-leaved Cotton  
} Grass, white tassels.  
*Rubus trivialis*; Running Blackberry.  
*Erigeron bellidifolium*; Mountain Daisy.  
“ *Philadelphicum*; Philad Flea Bane.  
*Geranium Robertianum* } Herb Robert, or  
} Mountain Geranium.  
“ 13 *Convallaria racemosa*; Clustered Solomon's Seal.  
*Lupinus perennis*; Common Lupine.  
*Kalmia angustifolia*; Low Laurel, Kill Lamb.  
\**Orobanche uniflora*; One-flowered Brown Rape.  
*Sanicula Marilandica*; Sanicle.  
*Raphanus raphanistrum*; Charlic, or Wild Radish  
“ 17 *Rubus occidentalis*; Thimbleberry.  
“ *odorata*; Flowering Raspberry.  
*Achillea millefolium*; Yarrow.  
*Fumaria officinalis*; Common Fumitory.



- June 17 *Rubus villosus* ; High Blackberry.  
*Cucubalus behen* ; Bladder Champion.  
*Oxalis stricta* ; Upright Wood-Sorrel.  
*Vaccinium resinsum* ; Whortleberry.  
 \* " *hirtellum* ; Hairy " "  
*Pisum maritimum* ; Beach Pea.  
*Robinia pseudacacia* ; Locust.  
 " 24 *Kalmia latifolia* ; High Laurel.  
*Lysimachia quadrifolia* ; Four-leaved Loosestrife.  
 † *Linnaea borealis* ; Twin-flower.  
*Lycopsis Virginica* ; Virginia Lycopsis.  
 † *Azalea viscosa* } Swamp Pink  
 " " } Wild Honey Suckle.  
 " 26 *Diervilla Canadensis* ; Yellow Diervilla.  
*Rosa lucida* ; Wild Rose.  
*Briza media* ; Quaking Grass.  
*Sedum acre* ; Golden Moss Wall Pepper.  
*Boottia sylvestris* ;  
*Celastrus scandens* ; Roxbury Wax-work.  
*Rhus radicans* ; Poison Ivy.  
 \* *Galium tinctorium* ; Dyer's cleavers.  
*Prunella vulgaris* ; Self-heal.  
*Gaultheria procumbens* ; Partridgeberry.  
*Ligustrum vulgare* ; Privet or Prim.  
*Ornithogalum umbellatum* ; Star of Bethlehem.  
*Genista tinctoria* ; Wood-waxen, Dyer's Weed.  
*Helianthemum Canadense* ; Rock Rose.  
*Arenaria lateriflora* ; Starwort.  
*Rosa rubiginosa* ; Eglantine, or Sweet Brier.  
*Rubus saxatilis* ; Stone Raspberry.  
*Epilobium spicatum* ; Spiked-willow Herb.  
 " 30 † *Anagallis arvensis* ; Scarlet Pimpernel.  
 † *Convolvulus sepium* ; Large Bindweed.  
 \* *Pyrola elliptica* ; Oval-leaved Pyrola.  
 \* " *secunda* ; One-sided " "  
 July 2 *Trifolium arvense* ; Rabbit's-foot, (clover)  
*Lepidium Virginicum* } Wild Peppergrass.  
 " " } " Cress.  
*Antirrhinum linaria* ; Toad-flax.  
*Pyrola chlorantha* ; Green flower'd Winter Green  
*Melampyrum pratense* ; Cow-wheat.  
*Drosera rotundifolia* ; Round-leaved Sun Dew.  
 " *longifolia* ; Long-leaved Sun Dew.

- July 2 *Myrica gale*; Sweet Gale or Dutch Myrtle.  
*Polygonum fagopyrum*; Buckwheat.  
*Arenaria rubra*; Sandwort;  
*Mitchella repens*; Chequerberry or moxy.  
*Aralia racemosa*; Spikeward.  
*Nymphæa odorata*; White Water Lily.
- " 8 *Spiræa alba*; White *Spiræa* or Meadow Sweet.  
*Cymbidium pulchellum*; Grass Pink.  
*Eriophorum Virginianum*; Brown Cotton Grass.  
\**Adiantum pedatum*; Maiden Hair.  
*Myosotis laxa*; Forget-me-not.  
\**Cunila pulegioides*; Pennyroyal.  
*Anemone Virginiana*; Tall Anemone.  
*Hypericum perforatum*; St. John's Wort.  
\* " *ascyroides*; Giant St. John's Wort.
- " 9 †*Impatiens noli me tangere*; } Jewel Weed-Touch-  
me-not.  
\**Hypericum parvifolium*; Small flowered St.  
[John's Wort.  
*Sarracenia purpurea*; Side Saddle flower.
- " 10 †*Geum strictum*; Yellow avens.  
†*Orchis fimbriata*; Fimbriated Orchis.  
*Anthemis cotula*; Mayweed.  
*Oenothera pumila*; Tree Primrose.  
*Pyrola rotundifolia*; Round leaved Wintergreen.  
†*Calla palustris*; Northern Calla.  
*Vaccinium macrocarpon*; Cranberry.  
*Sambucus Canadensis*; Common Elder.  
†*Thalictrum corynellum*; Meadow Rue.  
†*Veronica anagallis*; Water Speedwell.  
†*Coptis trifolia*; Goldthread.  
†*Galium asprellum*; Rough Cleavers.  
† " *obtusum*; Goose Grass.  
*Malva rotundifolia*; Round leaved Mallows.  
†*Eriophorum alpinum*; Alpine Cotton Grass.  
*Lilium Canadense*; Canada Lily (yellow)  
" *Philadelphicum*; Philadelphia Lily (red)
- " 14 *Hottonia inflata*; Inflated *Hottonia*.  
*Prinos verticillata*; Black Alder.  
†*Lysimachia thyrsiflora*; Tufted Loosetrife.  
*Polygala rubella*; Bitter *Polygala*.  
*Lysimachia hybrida*; Hybrid Loosetrife;  
" *stricta*; Upright. "

- July 18 *Dianthus armeria* ; Wild Pink.
- „ 14 \**Ceanothus Americanus* ; Jersey Tea.
- \**Proserpinaca palustris* ; Mermaid Weed.
- Cicuta maculata* ; American or Water Hemlock.
- \**Utricularia cornuta* ; Horned Utricularia.
- Asclepias Syriaca* ; Milk Weed.
- “ *pulchra* ; Water Milk Weed.
- \**Circæa lutetiana* ; Enchantress Night-Shade.
- “ 16 *Lobelia pallida* ; Pale Lobelia ;
- \**Circæa alpina* ; Alpine Enchantress Night-Shade.
- Clematis Virginica* ; Virgin's Bower.
- Rudbeckia hirta* ;
- Lactuca integrifolia* ; Arrow-leaved Lettuce.
- Eriophorum angustifolium* ; Narrow-leaved Cotton Grass.
- Solanum dulcamara* ; Woody Night-Shade.
- Convolvulus arvensis* ; Small Bindweed.
- \**Campanula Americana* ; American Bell-flower.
- Potamogeton heterophyllum* ; Veiny-leaved Pond Weed.
- “ 17 \**Acorus calamus* ; Sweet Flag.
- Tanacetum vulgare* ; Tansy.
- \**Bartsia coccinea* ; Painted Cup.
- Apocynum androsæmifolium* ; Dogbane.
- Pastinaca sativa* ; Wild Parsnip.
- Rhus glabra* ; Smooth Sumack.
- Bunias edentula* ; Sea Rocket.
- Cymbidium pulchellum* ; Tuberous Cymbidium.
- Pyrola rotundifolia* ; Round-leaved Wintergreen.
- Prinos verticellatus* ; Black Alder.
- Leonurus cardiaca* ; Motherwort.
- Verbascum thapsus* ; Mullein.
- Sagittaria sagittifolia* ; Arrow-Head.
- Rhus typhina* ; Stag's Horn or Velvet Sumach.
- “ *vernix* ; Poison Dogwood.
- Utricularia vulgaris* ; Bladder-wort.
- “ 22 *Asclepias purpurascens* ; Dark-flowered Silk-weed.
- \**Polygonum sagittatum* ; Arrow-leaved Bind-weed.
- Melissa officinalis* ; Balm.
- Lupinus perennis* ; Common Lupine.
- \**Clinopodium vulgare* ; Wild Basil.
- Cnicus arvensis* ; Canada Thistle.
- Orchis pycodes* ; Ragged Orchis.

- July 22 \**Antirrhinum Canadense*; Canada Snap Dragon.  
 " *Æthusa cynapium*; Fool's Parsley.  
 " 21 *Statice Caroliniana*; Marsh Rosemary.  
*Carpinus ostrya*; Hop-Hornbeam, or Iron-wood.  
 " 24 *Pontederia cordata*; Pickerel-weed.  
 \**Galeopsis tetrahit*; Common Hemp Nettle.  
 \**Agrimonia Eupatoria*; Agrimony.  
 " 26 *Apargia autumnalis*; Autumnal Hawkweed.  
 \**Erigeron officinale*; Hedge Mustard.  
 " 31 *Spiraea tomentosa*; Hardhack.  
 \**Vicia cracca*; Tufted Vetch.  
*Rudbeckia laciniata*; Rudbeckia.  
*Solidago* (several species) Golden Rod.  
 \**Hydrocotyle Americana*; Pennywort.  
*Lobelia cardinalis*; } Cardinal Flower or Pride of  
 the meadow.
- August 1 *Mimulus ringens*; Monkey-flower.  
*Gnaphalium margaritaceum*; Life Everlasting.  
 " 4 *Monotropa uniflora*; Ghost Plant, or Indian Pipe.  
*Orchis blephariglottis*; White Orchis.  
 \* " *dilatata*; Tall Orchis.  
*Collinsonia Canadensis*; Horse Balm.  
 " 6 *Podalyria tinctoria*; Wild Indigo.  
 \**Campanula erinoides*; Slender Bell-flower.  
*Prenanthes alba*; White Lettuce.  
*Lactuca elongata*; Wild Lettuce or Fire-weed.  
*Lobelia inflata*; Indian Tobacco.  
*Eupatorium perfoliatum*; Thoroughwort, Boneset.  
 " *purpureum*; Trumpet-weed.  
*Silene Pennsylvanica*; Catch-Fly or Wild Pink.  
 \**Scutellaria galericulata*; Common Scull-cap.  
*Potentilla fruticosa*; Shrubby Cinquefoil.  
*Elodea Virginica*; Meadow St. Johnswort.  
*Polygala sanguinea*; Century, or Purple Polygala.  
*Cephalanthus occidentalis*; Button Bush.  
 \**Polygala paucifolia*; Fringed Polygala.  
*Gnaphalium polycephalum*; Fragrant Life Ever-  
 lasting.  
*Lespedeza divergens*; Spreading Lespedeza.  
*Cuscuta Americana*; Dodder.  
 \**Cichorium intybus*; Succory, or Cichory.  
 †*Asclepias tuberosa*; Butterfly weed.  
 \**Hypericum Virginicum*; Virginia St. Johnswort.

August 6 *Arctium lappa*; Burdock.

- " 10 \**Sedum Telephium*; House-leek or Live Forever.  
 \**Scutellaria viridifolia*; [ ? ]  
*Datura stramonium*; Thorn-apple, or Apple Peru.  
 \**Corallorhiza multiflora*; Coral Root.  
*Cirsium pumilum*; Pasture Thistle.  
 \**Hieracium scabrum*; Rough Hawkweed.  
*Rhexia Virginica*; Meadow Beauty.  
*Helianthus annuus*; Sunflower.
- " 15 *Sida abutilon*; } Roman Velvetine or Indian  
 } Mallows.
- " 19 \**Cassia Marilandica*; Wild Scum.  
*Gerardia flava*; Yellow Gerardia.  
 " *tenuifolia*; Slender Gerardia.  
*Verbena hastata*; Blue Vervain.  
 \* " *verticifolia*; White Vervain.  
*Gerardia maritima*; Sea Gerardia.  
*Cnicus glutinosus*; Glutinous Thistle.  
 \**Penthorum sedoides*; Virginia Stone Crop.  
*Clethra alnifolia*; Spiked Alder.  
*Lycopus Virginicus*; Bugle Weed.  
 \* " *sinuatus*; Water Hoarhound.  
*Alisma plantago*; Water Plantain.  
 \**Echinocystis lobata*; Wild Balsam Apple.  
*Liatris scariosa*; Devil's Bit.  
 \**Plantanthera psycodes*; } Small Purple Fringed  
 } Orchis.  
*Sicyos angulatus*; Wild Cucumber.  
 \**Diplopappus umbellatus*; Umbellated Aster.  
*Glycine apios*; Ground Nut.  
 \**Desmodium Canadense*; Canadian Trefoil.  
*Polygonum sagittatum*; } Tear-thumb or Scratch  
 } Grass.  
 " *convolvulus*; Black Bindweed.  
*Solidago lævigata*; Marsh Golden Rod.  
*Spiranthes gracilis*; Slender Ladies' Tresses.
- " 24 *Mentha borealis*; Horsemint.
- " 25 *Polygonum scandens*; Climbing Polygonum.  
*Bidens frondosa*; } Brown Marigold, Harvest  
 } Lice, Beggar's Ticks.  
*Aster*; several species.  
*Sonchus oleraceus*; Sow Thistle.  
*Phaseolus triloba*; Three lobed Bean Vine.

- August 25 *Chelone glabra* ; Snakehead.  
 \* *Bidens cernua* ; Nodding Burr Marigold.  
     " *crysanthemoides* ; Large Flowering *Bidens*.  
 \* *Trichostema dichotoma* ; Blue Curls.  
 Sept. 1 \* *Solidago altissima* ; Rough leaved Golden Rod.  
     " 8 \* " *bicolor* ; White Rayed " "  
     \* " *lanceolata* ; Narrow leaved " "  
     \* " *odora* ; Spicy " "  
     " 5 \* " *sempervivens* ; Evergreen " "  
     *Helianthus strumosus* ; Wild Sunflower.  
     \* *Hieracium Kalmii* ; Kalm's Hawkweed.  
     \* *Aster Novangliæ* ; New England Aster.  
     \* *Amphicarpa monica* ; Wild Pea vine.  
     \* *Coreopsis trichosperma* ; Tick-seed Sunflower.  
     \* *Lathyrus maritimus* ; Marsh Pea.  
     " 8 \* *Potentilla Norvegica* ; Norway Cinquefoil.  
     \* *Centaurea nigra* ; Knapweed.  
     20 † *Gentiana saponaria* ; Soapwort Gentian.  
     " *crinita* ; Fringed Gentian.  
 Oct. 10 *Hamamelis Virginica* ; Witch Hazel.

*Thursday, January 28, 1858.*

Evening meeting at half past seven o'clock, the Vice President Russell, in the chair.

The list of donations was read as follows, viz :

*To the Library*—from Alpheus Crosby ; Essex Agricultural Society ; John Ball ; Charles W. Palfray ; John L. Russell ; Henry K. Oliver of Lawrence ; Humphrey Devereux ; William S. Roberts ; Caleb Foote ; Edward Barnard ; Montreal Society of Natural History.

*To the Cabinets*—from Alfred Walcott ; Charles A. Putnam ; R. Brookhouse, jr ; Elisha Haskell ; Benjamin A. West.

Letters from Charles B. Norton, of New York, respecting exchanges, were read.

The Institute listened to an account of the capture, on the West Coast of Sumatra, of the ship FRIENDSHIP, on February 1891 ; a paper prepared by Charles M. Endicott and to be found published in the Historical Collections of the Essex Institute, Vol. 1, page 15.

On motion of Henry J. Cross, a vote of thanks was tendered to Mr. Endicott, for his interesting and historical document.

It was also *Voted* to adjourn.

*Monday, February 15, 1858.*

Evening meeting at half past seven o'clock, Vice President Russell, presiding.

The donations since the meeting of 28th instant were announced as follows, viz :

*To the Library*—from W. H. Kilby, of Eastport, Me.; Boston Society of Natural History ; Robert Manning ; Thomas T. Stone, of Bolton ; John L. Russell ; Henry M. Brooks ; N. J. Lord ; Thomas Trask.

*To the Cabinets*—from B. H. Silsbee ; J. C. Howard ; Henry F. Shepard ; J. C. Very ; Thomas Trask.

John L. Russell in some observations upon the difficulty of procuring complete files of old newspapers, and the great value attached to such files in libraries, added to which the difficulty of supplying any that should be lost, offered the following resolves which were unanimously adopted :

*Resolved*, that all bound volumes and files of *Newspapers* belonging to the Essex Institute be permanently kept in its Reading rooms, and that none be taken therefrom, by any member or other person, unless by special *written* permission of the curators of the Historical Department.

*Resolved*, that the librarian or temporarily acting librarian of the Essex Institute ascertain what volumes and files are taken out; and that he notify the holders of them to return the same immediately.

Several curious and interesting specimens of Algæ brought from Zanzibar and presented to the herbarium by Henry F. Shepard were alluded to by the Chair; mention being made of *Zonaria pavonia*, *Turbinaria decurrens*, and of a lime encrusted species, the *Catenella opuntia*. These specimens were casually thrown among some marine zoological specimens but were of much value, and in the case of the second mentioned, was of considerable rarity. In collecting foreign specimens in one department, it were well to bear in mind that those of another, would not be amiss. Oftentimes the microscopist is rewarded by careful search among the sand and calcareous dust of sponges from abroad, and the botanist finds beautiful mosses and lichens among the packing of shells and minerals, especially if collected inland, and away from civilized life. The agency of many plants in depositing strata of lime, silica &c., was illustrated by familiar instances, an agency so seemingly trivial when viewed in some confined and narrow way, but grand and overwhelming when the mighty results seen in geological characteristics were apprehended.

Suggestions of a horticultural bearing were made by Robert Manning; of these the grafting the pear upon the quince for a stock: also the extent and limits of grafting in general: the practice of intermediate grafting and its most promising means of success. He considered it important to secure a good size to the first graft before a second was set upon it. The mode of using the quince for a stock was considered in its merits: and the probable reason why some kind of pears will readily unite with it, while others will not: and hence the need of the intermediate process. By some experiments by Mr. HENRY F. KING with the microscope, Mr. Manning had been assured by inspection and measure-



ments of the size of the cells in the bark tissues that the anastomizing might not be readily effected between the growing and vital parts of the quince and the particular variety of the pear that was under experimental treatment. It was due to Mr. King's courtesy and delicate manipulation with the instrument, that he ventured on these remarks.

Allusions were made to the failure of the apple crop for the last few years; also to the unfavorable aspect of the fruit crop during the past season: but it was noticeable however that certain varieties, which were ordinarily difficult of cultivation, had, this season, produced finer specimens than usual. The value of the Annual Exhibition of fruits and flowers was made the subject of some reflections, and the hope was entertained by the speaker that with greater facilities this value would be proportionally enhanced. The cultivation of the native grapes was also alluded to, as a subject engaging the attention of horticulturist and likely to produce most valuable results in agricultural pursuits.

The Chair was gratified with the train of thought pursued by Mr. Manning in his address this evening. He was acquainted with several amateurs in horticulture in this city, who with very small parcels of ground, were producing much that would be important in grape culture. Among these, mention should be made of John Fiske Allen's successful hybridization and subsequently of the experiments of Messrs. Edward S. and Augustus D. Rogers. A visit to either of these gardens would repay the attention of anyone. The progress that gardening has made in the city within a few years was certainly remarkable. The first introduction of some of our garden flowers was not many years ago. It were a pity that some one should not preserve a record of these now familiar objects and date, accurately, their first cultivation in our gardens. As to the failure of the apple crop in the west, might not the calcareous soils of that region be unfavorable to varieties and kinds, which thrive in their native granite regions? The query might be worthy

a passing thought, and perhaps lead to some valuable result.

Thomas Trask presented to the meeting some very good lithographs of several tropical plants, such as the sugar cane, banana, cocoa, coffee, &c., they were of value as pertaining to the botanical department.

Dr. H. Wheatland made allusion to the excitement and interest awakened by the blossoming of the night blooming *Cereus* (*Cereus grandiflorus*) in the conservatory of Ezekiel Hersey Derby Esq., in South Salem, on the night of the 9th of July, 1810.

After some business matters, the Institute adjourned.

*Thursday, February 25, 1858.*

Evening meeting at 7 1-2 o'clock, H. M. Brooks in the chair.

The Records of the preceding meeting were read and donations announced.

*To the Library*—from S. A. Green, of Boston; William B. Brown.

*To the Cabinets* from J. C. Edwards, of Boston; John G. Felt; Thomas Trask.

A singularly beautiful collection of artificially prepared and colored (to the life), fishes of Surinam were presented by Thomas Trask. It was the work of an artist resident there twenty years ago: and although exposed to the light yet had undergone no change; the fac similes retaining their original brightness and lustre. The material was paper and the construction was very ingenious. The groupe elicited much remark from the members of the Institute present.

The Secretary, in alluding to the donations made since the last meeting on the 15th inst., had occasion to speak

particularly of a bound volume of the SALEM COURIER for the year 1829; the gift of Mr. William B. Brown.

Some native plants gathered on the 13th of January last, from our pastures, were exhibited in full blossom by George D. Phippen. Of these, were roots and plants of the liverwort (*Hepatica triloba*), which opened its first flowers on the eleventh day after date and the blood root (*Sanguinaria Canadensis*) which expanded its flowers on the sixteenth day after gathering. Many of the vernal beauties of our fields and woods may be thus brought forward in the general atmosphere of the parlor. The remainder of the evening's session was occupied with a pleasant conversational discussion about marine and fresh water aquaria, suggested by a Circular of Samuel Tufts jr., of Lynn, and read to the meeting by H. Wheatland. The uses, to which, such apparatus could be applied in studying the habits of aquatic animals, insects and plants, and the best modes of constructing them and how to stock them so as to secure health and active life. came under consideration.

A small aquarium, made with a glass-dish employed by George D. Phippen, afforded him much recreation and instruction. He alluded to his pleasure in visiting the seashore in quest of specimens and his success in keeping them alive.

Gilbert L. Streeter also related a similar experience of his own; even the watching the motions and usual habits of a species of crab, and its moulting, were subjects of instructive interest.

After the election of several new members the Institute adjourned.

*Thursday, March 11, 1858.*

Evening meeting at 7 1-2 o'clock, George D. Phippen in the chair.

After the reading of the Records the donations were announced as follows, viz :—

*To the Library*—from Messrs. Adams, Sampson & Co., of Boston ; T. W. Higginson, of Worcester ; William Prescott ; J. Porter Felt ; F. W. Putnam ; H. F. Shepard ; James Kimball ; H. M. Brooks.

*To the Historical Department*, a collection [of old papers relating to former inhabitants of Salem was given by Charles H. Morse of Cambridgeport.

A letter relating to his donation of books from T. W. Higginson was read.

An interesting memoir on the ministers of Salem Village (now Danvers) subsequent to the dismissal of Rev. Samuel Parris was read by Samuel P. Fowler of Danversport and which will be found printed in the Historical Collection of the Essex Institute vol. 1 page 56.

The Secretary, Dr. Henry Wheatland suggested to the meeting the expediency and propriety of appointing a committee to collect the scattered materials relating to the early history of the commerce of Salem, after making some valuable remarks upon the subject.

On motion of Mr. Fowler a committee was appointed consisting of Messrs. G. L. Streeter, George D. Phippen, Henry M. Brooks, J. B. F. Osgood; and Samuel P. Fowler.

After election of several new members, the motion to adjourn was carried.

*Thursday, March 25, 1858.*

Evening meeting at 7 1-2 o'clock, Vice President Russell in the chair.

Records of preceding meetings were read, and the donations since the last meeting were announced.

*To the Library*—from the New York Lyceum of Natural History ; Peabody Institute of South Danvers ; Mrs. Margaret Fairfield ; David Perkins ; S. A. Green of Boston ; Waldo Thompson of Swampscott.

*To the Cabinets*—from Caleb Buffum ; Joel Kimball of Beverly ; C. J. Lee ; Charles H. Pinkham ; George Sibley ; James Perry.

Mr. George D. Phippen read a paper upon the old Planters of Salem, who were settled here prior to the arrival of Governor ENDICOTT in 1628 ; to be found in the Historical Collection of the Essex Institute vol. 1, Pages 97, 145, 185. This paper will be read with great interest by every one who cares for the enterprise which planted the colony of Salem upon the banks of Naumkeag River during the winters of 1627 and 1628. A most interesting relic of the times was the remnant of the bible of ROGER CONANT, printed in old English type and of the Geneva version of 1560.

The chair urged upon members present the importance of collecting and preserving with scrupulous care every fact, memorial &c., that will in any way elucidate our civil as well as Natural History.

Mr. S. B. Buttrick and Mr. G. L. Streeter presented through the chair a few early plants of this season, viz: the *Draba verna*, *Corylus Americana*, a species of *Salix* and *Alnus serrulata* gathered on the 20th inst; and the liverwort (*Hepatica triloba*) in blossom on the 23d inst at Swampscott, was offered by W. A. Phillips of that town.

A skin of an otter (*Lutra Canadensis*) captured about ten days ago near Cedar pond in South Danvers, by Messrs. Davis and others had been seen by Henry Wheatland. This animal is seldom to be found in this vicinity and its occurrence at this time is worthy of a record.

Allusion to the action of the Massachusetts Horticultural Society relative to the distribution of Seeds by the Patent  
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Office, at Washington was made by John L. Russell, he wishing the meeting to bear witness, that such action confirmed opinions respecting the value of such distributions, previously expressed by him before the Institute.

Mr. Phippen was thanked, by motion of James Kimball, for the grateful entertainment afforded the session of the Institute this Evening.

*Voted*, to adjourn.

*Thursday, April 8, 1858.*

Evening meeting at 7 1-2 o'clock, James Kimball presiding.

After the reading of the records the donations were announced as follows, viz:—

*To the Library*—from Lucius M. Boltwood of Amherst; T. J. Hutchinson; John H. Stone; Montreal Society of Natural History; Charles W. Upham; Jonathan Perley, jr.; John L. Russell; Charles B. Norton of New York; Henry F. Shepard; Samuel G. Rea; Nathan Frye; Miss Elizabeth Carlton; J. Linton Waters of Chicago, Ill.

*To the Cabinets*—from Henry F. Shepard; Brackley R. Peabody 2d; William Manning; Samuel R. Curwen; R. Wheatland; Henry J. Pratt; Justin Ridcutt; F. W. Putnam.

The evening was principally occupied by the reading of "Historical notices of Salem scenery," which has been published in the Historical Collections of the Essex Institute in Volume 2. page 2.

On conclusion of the reading of this paper by Gilbert L. Streeter, a conversation sprang up relative to the division of the "Common Lands," the old Proprietor system being now nearly extinct. Dr. William Prescott alluded to the origin of the Indian names some of which are yet in use.

A vote of thanks was passed for Mr. Streeter's interesting memoir : after which the Institute adjourned.

*Thursday, April 22d, 1858.*

Evening meeting at 7 1-2 o'clock, the President, Hon. Daniel A. White in the chair.

Records of preceding meeting read, Donations announced as follows, viz :—

*To the Library*—from T. W. Higginson of Worcester ; Samuel G. Rea ; Timothy Davis, M. C. ; Humphrey Devereux ; G. Parker Lyon of Concord, N. H. ; Nathan W. Gove, of Concord, N. H., Deputy Secretary of State ; C. Buffum of Lynn ; H. P. Ives & A. A. Smith ; James Cook, of San Francisco, Cal.

*To the Cabinets*—from Henry Derby ; O. C. Marsh of Lockport, N. Y. ; William A. Phillips of Swampscott.

A letter from Hon. Timothy Davis was read by the Secretary. It contained the information that, by his request, the Secretary of the Interior had placed the name of the Essex Institute upon the list of Institutions, entitled to receive the documents, published by order of Congress.

The evening was devoted to the discussion of horticultural subjects, particularly appropriate to the present time, when fresh buds are bursting forth and a new life is once more given to vegetation, so cheering and enlivening to the hopes and expectations of man. The evening was devoted to a discussion on Horticulture, and the subject was opened by remarks from Robert Manning, who chose for his theme the cultivation of new varieties of fruits. In this connection he instanced the successful experiments of the illustrious *Van Mons* in originating new kinds and whose reputation is world-wide ; basing his experiments upon Scientific theory and reducing this to practice. Among the less fruits Mr.

M. instanced the fine high bush blackberries of our gardens especially the *New Rochelle* or Lawton and the *Dorchester*, which he distinguished as an accidental seedling, successfully cultivated in this neighborhood by Capt. Josiah Lovett, 2d, of Beverly, for several years, and grown for its delicious fruit by others since. This variety he especially recommended for cultivation, as possessing superior qualities.

The mode of pruning trees was likewise introduced, Mr. M. advocating the plausibility and propriety of his own, suggesting that in young and growing trees, it would be found better to shorten the shoots, and in so doing to cut to some bud which is on the outside of the branch under training by the knife, cutting closely and smoothly as possible. He found that this mode insured a more symmetrical and uniform growth and a less entangling of the branches by and by. On being interrogated by Mr. William B. Brown, whether in an old tree making a few strong shoots it was best to cut away the old wood. Mr. Manning advised the shortening of the new wood, but by all means endeavoring to preserve the symmetrical shape of the tree. On the hybridization of plants, it was Mr. M's opinion, that such varieties should be selected as possess the qualities, which it is desirable to have united in the seedling offspring, illustrating his idea in the gooseberry where the high flavor of the English fruit should be sought for in American kinds, which are hardier and free from mildew, while in pears a fine variety would be that in which superior quality of flavor and flesh could be found combined with the property of keeping late and sound.

Mr. George D. Phippen spoke of the process of injudicious pruning, mentioning a disastrous case which came under his observation, where too much of the tree had been cut away in the process of grafting. The scion grew freely it is true, but the bark seemed to suffer from insufficient sap; at least, on the following Spring, large patches of dead matter, similar to that produced by fire-blight, appeared upon



the limb beneath the graft. The remarkable power of invention in man was seen in this production of new kinds of fruit and in different sorts of vegetation, which became wide apart in qualities from the original stock. And even in Horticulture we witnessed the curious results by hybridization, of which he cited his own experiments, his method of manipulation and the success attending it; subjects of much interest to the meeting.

The tendency of all plants to finally return to their original type when left to themselves and without careful cultivation was cited by Mr. Manning in referring to Mr. Phippen's remarks. Not only was this true of accidental variations upon the adult plant or perfect tree, but was even seen in those, raised artificially from seed. In regard to over-pruning, where the soil is rich as in the Western States, the effects were certainly of an injurious character. Instead of stripping off every shoot and sucker upon the stem, the suffering them to remain would be found advantageous in the shade and protection afforded to the bark, which gets heated unduly by the sunshine. When vigorous growth is requisite, pruning should be done in the dormant condition of the tree; but when its growth needs checking, or when its fruit is to be produced, then pruning should be done in the growing state of the plant. For grafting smaller stocks, say of an inch or less in diameter, a sort of saddle-grafting and under the bark has been found serviceable, the process of which Mr. M. described. The desultory mode of the discussion arose from the conversational tone given to the consideration of the subjects of the evening's session, which however was found promotive of much information and instruction. The Chair participating in the conversation, expressed his belief that these topics thus introduced, would be found of interest to the members present.

The following Spring flowers were noticed by S. B. Buttrick, not previously reported this season, viz: *Erythronium*

Americanum, Antennaria plantaginifolia, Taraxacum dens-leonis, &c., &c. He thought there was very little variation in respect to earliness or tardiness between this and the preceding spring, although the present is about ten days later than it has been in previous years.

Several questions were now proposed by Jacob Batchelder, which gave rise to a new discussion, in which Messrs. Phippen, Manning, and Russell participated. The new position of the transplanted tree was of no consequence, care being mainly directed to the judicious spread of the roots and their depth in the soil, which should be properly prepared. Some trees seemed to assume particular slanting directions, but prevalence of certain winds in such exposures as on plains or on the sea-shore would account for these. Reversed in position by transplanting, the effect would be to produce symmetry by the same agencies. In pear culture, cross breeding or hybridization would probably produce the surest results. Van Mon's plan was, in short, to sow the seeds of the best varieties for successive generations, each exhibiting superior qualities and earlier bearing properties. A family likeness would be retained even in these different varieties, the beurre would be buerre, the gritty pears would produce gritty, but with modifications, until the acme of perfection had been obtained, when the tendency would be to return to the old type, or to degenerate as it is called. The old *S. Michael* shows this in a remarkable manner, only occasionally producing the perfect fruit. The influence of the scion upon the stock was yet a subject involved in much obscurity: once it was thought to have no influence, but lately it is admitted to have some. Instances are on record of curious variations in flowering shrubs, which when grafted upon other species and varieties affecting the bark so as to produce its adventitious buds partaking of the character of the scion from which they could not have originated; a fact if authenticated, which would prove something like a contamination, so to

speak, in the tissue and not unlike the effect of the inoculation of virus in the animal subject. The vulgar belief that when the original tree has perished, all its offspring by scions and cuttings will follow the same law and destiny, was considered to be without foundation and inadmissible.

After some business being transacted the Institute adjourned.

*Thursday, May 12, 1858.*

Annual meeting this day at 3 o'clock, P. M. In the absence of the Venerable President HON. D. A. WHITE, the chair was filled by John L. Russell, Vice President of the department of Natural History.

The records of the preceding Annual Meeting were read ; also the Report of the Secretary was read and accepted ; and the Report of the Treasurer on being read was referred to the Finance Committee.

By the Report of the Secretary we are informed that the past year will be memorable in the annals of the society, as the one, during which, the collection and the library were removed from the Pickman Place to these commodious rooms in Plummer Hall ; an edifice erected by the munificence of the late Miss Caroline Plummer, and one that will be the pride and glory of our city ; may the same enlightened zeal prompt our citizens to sustain and liberally endow the institutions now located in that building, which induced this lady to provide such ample means for the accomplishment of such a noble object. It was the desire of the Committee to whom was assigned the duty of superintending the removal and the erection of additional cases, &c., to present in detail a report of their doings ; but circumstances, beyond their control, have prevented ; they, accordingly, ask permission to report at some future meeting.

The present number of subscribing members are three hundred and sixty eight ; corresponding, seventy one ; honorary in virtue of their connection with the Essex Historical Society, eleven ; total, four hundred and fifty. During the year fifty-four have been admitted ; fourteen have removed from the county ; ten have retired, and four have died. Of these last, it is appropriate that some tribute should be paid to their memory.

One of this number was active in the early incipient stages of the formation of the Historical Society, and, from that time to the union in 1848, was successively elected to various offices ; since then he has been one of the Vice Presidents of the Institute, the HON. JOHN GLEN KING, whose decease was announced at the meeting in Manchester, on Tuesday, August 4, 1857. He was the son of James and Judith (Norris) King, and was born in Salem, March 19, 1787. He graduated at Harvard College in 1807, and was the youngest of that corps of scholars and gentlemen, who gave tone and character to the Essex Bar, in the generation, which is now rapidly passing away. He was a man of great private worth, and has been called, by his fellow citizens, to posts of honor, all of which he filled with great ability and dignity. He devoted much of his leisure from professional duties to history and literature, and was conspicuous among the lovers of both. He died at his residence in Salem, after a long and lingering illness, on Sunday morning, July 26, 1857.

2. HON. STEPHEN CLARENDON PHILLIPS, whose sudden death, by a shocking and terrible disaster, in which hundreds of others also suffered, was announced to us on Saturday June 27, 1857. His death was considered a great public calamity to this city. The public offices municipal, state and national, which he has filled with so much ability and distinction ; his services in the cause of education, philanthropy, and morals ; his mercantile energy and enterprise ; his public merit and far seeing sagacity, have made their mark upon

this community which will cause his name to be long remembered with gratitude and honor. Although never an active member of this society, yet he was a generous contributor to all measures promotive of its objects, even from the very beginning. He was the son of Stephen and Dorcas (Woodbridge) Phillips, and was born at Salem, Nov. 4, 1801—a graduate of Harvard College in the class of 1819. He was a victim of the frightful steamboat disaster on the St. Lawrence River, on Friday afternoon, June 26, 1857.

3. EBEN KNOWLTON LAKEMAN—whose sudden death took place at his residence in this city, about 3 o'clock, A.M., Wednesday May 27, 1857. He was the son of Richard and Lucy (Knowlton) Lakeman, of Ipswich, and was born in that town, Dec. 10, 1799. He came to Salem in his boyhood, where he has since resided; he has ever been a valuable citizen, active and faithful, and in all the various relations of life his services were frequently called into requisition, and were always cheerfully rendered.

4. ISRAEL DAY SHEPARD, for several years an active and enterprising business man in our community. He connected himself with the society, only a short time previous to his decease, and consequently, in this relation, his worth was but little known. He was the son of Samuel and Mary (Langmaide) Shepard, and was born at Danville, Vt., 14th of April 1818. He died at Salem, May 20, 1857.

During the past season, six field meetings were held, viz: in South Danvers, Beverly, Wenham, Manchester, West Lynn, and Hamilton. They were very numerous attended. It was gratifying to notice the increasing interest in their success—the inhabitants of the towns visited were very kind and attentive—they pointed out all objects of interest; after the excursion suitable accommodations were provided for the meetings, either in some commodious school-room,

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the vestry, or the town hall. These meetings, if properly conducted, can be rendered of great benefit in diffusing a taste for the study of nature in our rural towns; inducing those who are constantly surrounded with these glorious works, in their daily routine of duties to become co-laborers in the investigation of the Natural History of this county. Much can be accomplished by securing the services and assistance of these persons. A social feeling is also engendered, which should be more generally cultivated among the residents of our several towns and villages.

Eight evening meetings have been held at the rooms of the Institute during the winter and early spring—the first, was introductory; the second, fifth, sixth, seventh, were principally devoted to Historical subjects;—the third, to those of Natural History; and the fourth and eighth, to those of a Horticultural character; also quarterly meetings and ordinary ones, occasionally on Wednesday's at noon, for the election of members, and other incidental business matters.

The following additions during the year may be specified:—

TO THE DEPARTMENT OF NATURAL HISTORY. *Mammals and Birds.* Charles F. Williams—Musk Deer, from Java, Henry F. Shepard—Living specimen of *Cynocephalus* sp. Baboon, from East coast of Africa. S. Jillson—a collection of mounted specimens of Mammals and Birds, comprising twenty-five species. Mrs. G. R. Mason—*Fringilla Canariensis*. William S. Putnam—Albino specimen of *Turdus migratorius*. George Osgood, of Danvers—Whidah Bird, *Vidua* sp. John Burchstead, of Hamilton—White headed Eagle, shot at the Essex Ponds. R. S. Rogers—Parroquet, from Sydney, N. S. W. Joseph Osgood—Nest of the Taylor Bird, from Elephanta. B. Grover—*Ardea herodias*.

*Reptiles and Fishes.* N. C. Robbins—a collection of Reptiles and Fishes, from Florida. Joseph True—*Salamandra venenosa*. George A. Perkins—several species of

Turtles, also *Chaetodon* sp. from Brazils. Joseph Farnum, Jr.—*Phrynosoma cornuta*, from New Mexico. S. Cloutman—Chameleon, from Zanzibar. N. E. Atwood, Provincetown, *Cryptocanthoides maculata*. J. M. Ives—*Salmo fontinalis*, from Wenham Pond. W. H. A. Putnam—twenty species of Fishes, from Penang, Batavia and Singapoer. D. F. Weinland—several species of Fish, from Hayti. Charles A. Putnam—*Perca flavescens* from Marblehead. R. Brookhouse, Jr.—*Salmo fontinalis*, from Bangor, Me. E. Haskell—Fishes, &c., from ports in the Gulf of Mexico. B. R. Peabody, jr.—*Mystus*, from Buenos Ayres.

*Mollusks.* L. J. Johnson—specimens of *Planorbis* and *Cyclas*, from Toronto. C. W. F. W. Putnam—*Anadonta*, from Fresh Pond, Cambridge. D. F. Weinland—species of *Anatifa*, from the Gulf weed. J. C. Very—*Cinceras vittata* and *Otton Cuvieri*, from the Indian Ocean.

*Articulates.* L. J. Johnson—*Astacus Bartonii*, Toronto, C. W. L. R. Stone—*Attacus Luna*. Geo. A. Perkins—*Libinia canaliculata*. D. F. Weinland—Crustacea, from Hayti. A. Walcott—*Scolopendra morsitans*, from Calcutta. H. F. Shepard—*Carabus*, sp. from Zanzibar. G. F. Read—Malformed Lobster's claw.

*Radiates.* James M. Barnard, of Boston—specimens of *Goniasters*, &c. H. F. Shepard—Sponges, Corals, &c., from East coast of Africa. B. H. Silsbee—Coral, from East Indies. F. W. Putnam, Coral, twenty species. W. A. Phillips, of Swampscott—Star Fishes, &c.

*Comparative Anatomy.* R. H. Wheatland—skull of *Cervus alces*, from Maine. O. C. Marsh of Lockport, N. Y.—skull of Cariboo from Nova Scotia. Moses Porter—skull of *Mustela vison*. Charles H. Pinkham—skull of *Diomedea albatross*. George Sibley—skull of *Canis (vulpes) fulvus*.

*Herbarium.* C. F. Williams—specimen of Broad Fruit and Mangosteen, from Batavia. Mrs. Wm. Oakes, of Ip-

swich—*Polyporus*, sp. from the White Mountains, N. H. H. F. Shepard—Stalk of a Labiate plant from Majunga. Justin Rideout—singular growth of *Fungus*. R. Wheatland—specimen of India Rubber, from Java.

*Minerulogy and Geology.* Pliny Fisk—Fossil wood, from Brandon, Vt. B. F. Mudge, of Lynn—*Sigillaria*, from Scotland. F. W. Putnam—*Brontozoon*, from Turner's Falls. Wm. Prescott—cast of a Foot Print in the new Red Sandstone, Wethersfield. B. A. West—Petrified wood, from Rio de la Plata. Mrs. C. M. Richardson—Quartz Crystals, from Herkimer Co., N. Y. R. Haskett Price—peice of supposed Meteorite, from Marblehead. John G. Felt—Iron Ore, from Fort Henry, Lake Champlain. O. C. Marsh—*Infusoria* earth from Brandon, Vt.

TO THE HISTORICAL DEPARTMENT. from James B. Curven—Photograph of Charles Goodyear. T. Trask—a case containing representations of the Fishes of Surinam, made of paper. Richard Hood—Indian gouges and other relics. W. T. Julio—spears &c., from Africa. J. C. Howard—spears from North West Coast of Africa. C. Buffum—an antique spoon dug up in Essex Street. Joel Kimball—an Indian stone axe, found at West Beach, in Beverly. W. Manning—a cartridge Box, taken from the *Guerriere*, which was captured by the Constitution. S. R. Curwen—Bow from China. Henry Derby—Dress worn by the women at Loanda, West Coast of Africa. George F. Chever and Wm. A. Brooks—coins.

The above were contributed by fifty nine different individuals.

**LIBRARY.** During the past year the Library has received many important and highly valuable additions,—among them may be mentioned the noble donation from our President, Hon. D. A. White; Messrs. James Upton H. F. Shepard and others have also contributed liberally to this Department. The files of Newspapers bound, purchased at the sale of the



furniture, &c., of the Oriental Insurance Company, consisting of some one hundred and fifty volumes, are a great addition to the collection of Newspapers:—in this respect our library is exceedingly rich, its further extension ought, however, not to be lost sight of in the pursuit of so many objects that are constantly demanding our attention. In this connection it is well to consider what action should be taken in respect to the collection of pamphlets which is now quite extensive—to render them available, they should be bound into series of volumes. If a fund could be procured and the income arising therefrom be appropriated specifically to this purpose, a great desideratum would be supplied.

Additions during the year from all sources:

Newspapers,	172	
Folio,	8	
Quarto	169	
Octavo, and lesser-fold	1625	
	—1974 vols.	
Serials	307	
Pamphletts	1186	1493
		<hr/> 8467

The above have been contributed by ninety-nine different Institutions and individuals: viz:

Massachusetts Legislature.  
 Boston, City of  
 American Antiquarian Society (Worcester.)  
 Boston Public Library.  
 Boston Society of Natural History.  
 Chicago Historical Society.  
 Elliott Society of Natural Society, (Charleston)  
 Essex Agricultural Society.  
 Montreal Society of Natural History.  
 New York Lyceum of Natural History.  
 Ohio Mechanic's Institute.  
 Peabody Institute, (South Danvers.)  
 Smithsonian Institution.

- Adams, Sampson & Co.  
 Anderson, Miss Mary C.  
 Archer, Wm. Jr.  
 Ball, John  
 Barnard, Edward  
 Batchelder, Mrs. Jacob  
 Boltwood, Lucius M., of Amherst.  
 Brooks, H. M.  
 Brooks, C. T. of Newport, R. I.  
 Brown, J. S., of Ashly  
 Brown, W. B.  
 Buffum, C., of Lynn  
 Carney, Charles F., of Boston  
 Carlton, Miss Elizabeth  
 Chever, George F.  
 Cole, Mrs. N. D.  
 Cook, James, of San Francisco,  
 Crosby, Alpheus [Cal.  
 Davis, Timothy, (M.C.)  
 Devereux, Humphrey  
 Fairfield, Mrs. Margaret  
 Felt, Charles W.  
 Felt, J. Porter  
 Flint, Charles L., Sec'y Board of  
 Agriculture, Boston.  
 Folsom, George, of New York  
 Foote, Caleb  
 Frye, Nathan  
 Green, Samuel A., of Boston  
 Gove, Nathan W., Dep. Sec'y of  
 State, Concord, N. H.  
 Henshaw, William, of Boston  
 Hickling, Swan & Brewer, of Bos-  
 ton.  
 Higginson, T. W., of Worcester.  
 Holmes, J. C., of Lansing, Mich.  
 Hutchinson, T. J.  
 Ives, Stephen B.  
 Ives, H. P. & Smith A. A.  
 Jewett, George B.  
 Jones, Nathan, of Wenham  
 Kilby, W. H. of Eastport, Me.  
 Keith, J. H. of Cleveland, Ohio  
 Kimball, James  
 Lacerda, A. F. de, Bahia, Brazil.  
 Lapham, I. A., Milwaukee, Wn.  
 Letour, L. A. H., Montreal, C. E.  
 Lord, N. J.  
 Loring, Geo. B.  
 Lyon, G. Parker, of Concord, N.H.  
 Manning, Robert  
 Marsh, O. C., of Lockport, N. Y.  
 Norton, Charles B., of New York.  
 Oliver, H. K., of Lawrence  
 Palfray, C. W.  
 Peabody, Francis  
 Perkins, David  
 Perley, Jonathan, Jr.  
 Phippen, Geo. D.  
 Pickman, Miss L. R.  
 Prescott, William  
 Prime, William H.  
 Putnam, Charles A.  
 Putnam, F. W.  
 Rea, Samuel G.  
 Russell, J. L.  
 Roberts, W. S.  
 Scribner, Wm. M., of Boston  
 Shepard, Henry F.  
 Shepard, T. P., Providence, R. I.  
 Sibley, John L., of Cambridge  
 Smith, Jesse  
 Snow, E. M., Providence, R. I.  
 Streeter, G. L.  
 Stone, B. W.  
 Stone, E. M, Providence, R. I.  
 Stone, John H.  
 Stone, L. R.  
 Stone, T. T., of Bolton  
 Thompson, Waldo, of Swampscott.  
 Trask, Thomas  
 Upham, Charles W.  
 Upton, James  
 Waters, J. Linton, of Chicago, Ill.  
 Webster, John  
 White, Daniel A.  
 Worcester, J. F.  
 Worcester, S. M.

The Horticultural Exhibitions were omitted, the past season, in consequence of the unsettled condition of affairs during the removal.

The curators in the several departments have not yet completed the arrangements of their respective collections, consequently they are not yet prepared to report.

The Treasurer's account exhibits a favorable condition of the Finances which will be duly submitted.

The above exhibits a fair account of the present condition of the Institute with the collections of the several departments, arranged. The library catalogue which was commenced last summer and advanced so far as to allow the circulation of the books, will be prepared for the use of the members as soon as circumstances will admit. We trust that the Institute will grow in public favor, be well patronized and thereby be the better enabled to carry out the liberal and enlarged views of the founders and the great object of its organization.

The following were elected officers for the year ensuing and until others shall be chosen in their stead.

*President*—DANIEL A. WHITE.

*Vice-President*—John Lewis Russell, John Clarke Leo, Henry M. Brooks.

*Secretary and Treasurer*—Henry Wheatland.

*Librarian*—John H. Stone.

*Cabinet Keeper*—Caleb Cooke.

*Finance Committee*—John C. Lee, E. Emmerton, Richard S. Rogers, George D. Phippen, Robert Manning.

*Library Committee*—Daniel A. White, David Roberts, Samuel P. Fowler.

*Publication Committee*—John L. Russell, Henry Wheatland, George D. Phippen.

*Curators of the Historical Department*—On Ethnology William S. Messervy, Matthew A. Stickney, F. H. Lee. On MSS.—Henry M. Brooks, L. R. Stone, S. B. Buttrick, Gilbert L. Streeter. On Fine Arts—Francis Peabody, Joseph G. Waters, A. Stone.

*Curators of Natural History*—In Botany—John L. Russell. In Mammalogy—Frederick Windsor. In Ornithology—Frederick W. Putnam. In Herpetology—Charles R. Waters, P. D. Allen. In Ichthyology—Richard H. Wheatland. In Comparative Anatomy—Henry Wheatland. In Articulata—Caleb Cooke. Mollusca Henry F. King. In Radiata—George A. Perkins. In Mineralogy—Benj. F. Mudge. In Geology—Henry F. Shepard. In Palæontology—Henry F. King.

*Curators of Horticulture.* On Fruits and Vegetables—James Upton, Robert Manning, John F. Allen, Richard S. Rogers, George B. Loring, Charles F. Putnam. On Flowers—John C. Lee, Francis Putnam, William Mack. On Gardens—John L. Russell, John C. Lee, John Bertram, Joseph S. Cabot, Benjamin A. West.

After the election of the officers, a singular constructed nest of the Golden Robin or Baltimore oriole (*Icterus Baltimore* Wilson,) was exhibited to the meeting by Mr. S. P. Fowler. The materials were undoubtedly the sweepings from some milliner's shop, and consisted of, shreads of lace, silk, thread, cotton, and a threaded needle, with other etcetera, culled from before the door. The whole was ingeniously and wonderfully interwoven into a fantastic and elegant cradle nest. The remarks which Mr. F. offered on the habits of this superb native bird, led to a discussion of the habits of the common robin or thrush, (*Turdus migratorius*, L.) as to its value for destroying insects injurious to vegetation and in regard to its fruit-eating propensities, with certain grave

charges laid against its character besides. Several members participated in the discussion, of whom Messrs. Fowler, Upton, Mudge and Russell were the principal speakers and by whom the bird was defended or charged with faults, in turn as its present character in relation to gardeners' and farmers' interest, was concerned. The important fact authenticated by Mr. F. W. P. Jenks, Professor of Entomology to the Massachusetts Horticultural Society, of its utility in helping to annihilate the cut worm of the meadow grass, a pestilent fly, which in its larva condition bites off, beneath the ground, the growing stalk of the young grass, was commented upon, as an evidence in its favor as the agriculturalists' friend. Mr. Jenks found the stomach of the robin oftentimes filled with these pernicious grubs, which he subsequently ascertained to be the transition state of *Bibio albipennis* of SAY, a crane-fly of the order Tipuladæ. Nor were these its only insect food; but other species were discovered to enter into its animal diet. Such a diligent co-laborer with man were surely entitled to a dessert of a few of the finest cherries or of the sweetest strawberries. An instance of the secret benefactions bestowed by what are termed mischievous birds, was brought forward in the case of the domestic pigeon or dove, in the stomachs of whose young were found innumerable canker-worms gathered assiduously by the parent birds from the apple-trees of a neighboring garden, which they had for some time previously frequented, much to the surprise of the owner, who could not imagine for what purpose they alighted upon these branches, a habit rather unusual to these birds.

Some new resident members being now elected, the Institute adjourned.

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Wednesday, June 2d, 1858.

FIELD MEETING AT NAHANT. This was the first of the series of field meetings of the season ; and a day was selected so early in the summer as to secure as much as possible a clear coast from the usual summer visitants and periodical residents upon this wonderfully picturesque promontory, embracing as it does some of the most interesting natural features in the varied scenery of Essex County. By the attention and courtesy of B. F. Mudge of Lynn, ample accommodations and means had been provided for a transit across the beaches to the point of destination. A large party of ladies and gentlemen with members of the Institute and the usual corps of practical collectors left Salem in the nine o'clock train. Such of the number, who preferred riding, found means to do so ; while others availed themselves of their own organs of locomotion, in order the better to see, observe and collect whatever might meet the eye in their rambles over pebbly beach or sandy and wave-beaten shore. A later delegation from the Salem High and Classical School with its Principal, Mr. Jacob Batchelder and other teachers at their head, took a later train, but in season to join the several parties in some portion of the morning's excursions.

Having arrived to the place of destination the next important point was to ascertain what to visit and where to ramble. This was soon settled by B. F. Mudge, Esq., who was perfectly acquainted with all the best localities for geological wonders or mineral treasures, with which Nahant is supposed to abound. By far the largest portion of the party accordingly followed his lead, and pursued a devious way around the shore, and across the rocks and loose stones so profusely scattered about or lying in grim and grand repose *in situ*. Many beautiful specimens of transition and metamorphic forms were visible with dikes and the *et cetera* of such a region. The first distinct halting place was made at "Swallow's Cave," the only natural cavern, of any note, in

this vicinity. The state of the tide was so favorable that some of the more adventurous passed quite through this singular fissure. On the shore-side the mouth of the cave is high and broad ; but as the adit is penetrated, the passage becomes narrow and somewhat winding. It also required some care and surefootedness to pass over the smooth and wave polished pavement and to overcome the obstacles in the way. The portion, which required the most judgment to visit was a pool quite near the outer mouth, in which the sea anemonies (*Actinia marginata*) have their abode. We well remember that many years ago we visited this cavern under the common impression that here only could they be found. As some of the party had never witnessed these animal flow-ers there was a laudable desire to penetrate to their habitats. It was done however at the expense of wetted feet and moistened garments ; and even when this deed was accomplished, these impolite inhabitants of the ocean obstinately refused to receive their unwonted guests with open arms or to display their petal-like rays, in which form the chief beauty lies. Alas ! how often simple truth is slighted when found after the search for it under persuasive fiction : and in some dull opaque lumps of what seemed to be the ends of tallow candles, the disappointed visitors could hardly imagine, lay concealed a wonderful beauty and exquisite symmetry and marvelous apparatus of mechanical organization. The high and vaulted roof when beaten by the incoming tides lashed to fury by the winds must produce a grand effect, and worthy the attention of those, who come to such a spot for curiosity or pleasure. The tints upon its sides produced by closely adherent and crustaceous, lichen-like algæ, aided in their way to heighten the many colors of the veiny and mottled, and speckled surface of the mineral strata. Altogether Swallow's Cave is one of the many wonders of Nahant, notwithstanding the sea anemonies do not dwell exclusively in its pools and do not grow only upon its walls ; but may be

found at "Red Rock" and in many places elsewhere about the shores of the Bay.

There were other points of interest visited by the several parties, who were on the scout during the morning's rambles. Of these, mention may be made of the "Natural Bridge," which lies over a narrow chasm of rocks, worn out by the violence of the waves. The fountainlike spray tossed from the rebound of the incoming waves at "Spouting Horn" was this morning particularly beautiful. The spectator can place himself safely almost over the very apex of the rift or so closely at its side as to be immersed in the snowy foam as it falls in the air. The grand diapason of the concussion far below, adds to the charm. Not every coming wave is thus borne upward, but occasionally one or more greets the waiting guests. Sometimes the welcome is rather overwhelming, yet there is no alternative but philosophical patience and good nature or loss of the spectacle.

To our party few in numbers, and the chance for sight seeing all the more favorable, the aspect of affairs was exceedingly pleasing. Before us lay the blue ocean in peaceful serenity relieved by the picturesque Egg Rock with its occasional patches of green amid its predominant sterility, and the variegated shores of Lynn and Marblehead. The atmosphere was of the deepest blue, and the sun clear, bright and cheering. The foam-lashed fragments of huge rocks partially covered and then again laid bare, were spreading their dripping sea-weeds to the refreshing waters, which laved their fronds and filled them with a strange and weird beauty. Over pebbles and rounded stones murmured the breaking sounds so full of music and harmony: and from many a slippery shelf of narrow foothold on the cliff's sides poured in miniature waterfalls the waves, only to be dashed again and again to the places from which they fell. To pass over or across some of these paths at the base of the overhanging structure, was to be the work of celerity and caution, if it was to be executed in safety.



A stratified rock at the eastward of the Hotel situated near the extremity of the peninsula, was pointed out and explained by Mr. Mudge, who was familiar with the locality and its peculiarities. He considered it a basin of corals at some ancient geological period, now recognized by its changed and petrified appearances. He thought that it indicated a different climate, or at least a higher temperature than now attains in these waters.

The meeting-house of the Independent Methodist Church having been generously offered as a place of gathering, thither the several parties resorted as they completed their tours around the shores. After the usual refreshments and rearranging of soiled and torn garments and the resuming of good looks and smoothing of hair and repair of rents and wear, incident on pedestrian efforts, for which a neighboring mansion was kindly provided for the ladies exclusively as a place of toilet, the company were invited to a session of the Institute, the meeting being called to order at half past two o'clock, Vice President Russell in the chair.

The Secretary proceeded to read the records of the last field meeting. The donations since the last annual meeting were also announced as follows, *viz*:

*To the Library*—From Geo. A. Perkins ; George F. Read ; William Brown ; Chicago Historical Society ; Thomas A. Sweetser, of South Danvers ; O. C. Marsh, of Lockport, N. Y. ; Massachusetts Legislature ; Charles B. Norton, of New York ; American Antiquarian Society ; Jonathan Perley, jr. ; Charles H. Price ; William Sharswood, of Philadelphia, Pa. ; Mrs. Lucy P. Johnson.

*To the Cabinets*—From William O. Potter ; George F. Chever ; John Burley ; Joseph P. Pond ; W. R. Wheatland ; Mrs. John Chadwick ; George Pettingill ; R. Wheatland. .

Letters had been received from Rev. William Barry,

Secretary of the Chicago Historical Society ; W. R. L. Ward, of New York ; William Sharswood of Philadelphia, Pa. ; Charles B. Norton of New York.

A discussion relative to certain Reptiles was next introduced in which Messrs. R. H. Wheatland, S. P. Fowler and F. W. Putnam participated and elucidated several doubtful points of enquiry which had been raised.

Mr. Jacob Batchelder propounded a question about the black henbane (*Hyoscyamus niger*) solved by the Chair. Its singular re-appearance after being lost for many years, and then mostly in old cellars or upon ruins and perchance in rubbish heaps, had been observed by many persons. This plant has abundance of seeds yet very few seem to vegetate; and the cause may be an imperfect impregnation or else something peculiar in the soil may be unfavorable to its germination. It forms an exception in these respects to most foreign species, which the most troublesome weeds in our cultivation: and the reasons why this is so, would form an interesting enquiry for the agricultural chemist or for the naturalist. The Chair remarked on the occurrence likewise of other rare plants—upon some species of mosses found on the rocks of Nahant, and upon the facilities, which so bold an exposure to the ocean afforded to the algologist in studying the algæ of these northern shores.

B. F. Mudge spoke of the geological and mineralogical characteristics of this peninsula. He said that it abounded in a variety of minerals; perhaps no less than fifteen or twenty kinds may be found here; of which he instanced five sorts of garnet, green epidote, sulphate of copper &c., &c.

A colony of cliff swallows (*Hirundo fulva*, Vieillot) having been noticed under the eaves of the meeting house, and their nests to the number of twenty or more being singularly affixed presenting a very curious appearance, gave origin to a series of observations upon birds and their habits in which Messrs. Batchelder, Fowler, Mudge and the Chair took part, and which elicited some interesting matter.

Rev. Charles F. Barnard of the Warren Street Chapel, Boston, being present asked leave to observe, that he had heard with much satisfaction about these field meetings and had been pleased to find how conducive of good they were. He longed to see what he had thus enjoyed this day at Nahant, most widely repeated. It was fortunate for the Essex Institute to have at its head such a naturalist as its presiding officer. He was an old and well known acquaintance of his, and he could easily understand how enthusiastic might be exploring parties with such a leader. Mr. R's familiarity with objects of Natural Science had made its pursuit a sort of second nature, and why should not others learn to love so much that is beautiful and at the same time that is common, in the same way and to the same extent. The young and old ought to have "field meetings" often, to learn to their advantage how good is God and how wonderful are His works.

On motion of S. P. Fowler the following vote was unanimously adopted.

*Voted*, that the thanks of the Essex Institute be presented to the Trustees of the Independent Methodist Church of Nahant for the use of their building to hold the meeting of this day; also to the inhabitants of Nahant for the kindness and hospitality extended to the members of the Institute and their friends during their visit to this highly interesting and attractive peninsular town.

At an early hour of the session Mr. C. M. Tracy presented the meeting with an account of the Flora of Nahant, which is here appended in detail; the same being prepared from the rough notes offered by the request of the Chair at the meeting, from his herborization of the morning, and enlarged afterwards by more extensive enquiries and research.

The meeting being adjourned by vote, the company returned home on different routes, delighted with the pleasant features of the day.

## NOTICEABLE TRAITS OF THE FLORA OF NAHANT.

BY C. M. TRACY.

In all its climatic and physical relations, Nahant is essentially an island. The slender beach joining it with the mainland seems to be an element altogether unimportant in this view, having probably, but a nominal influence in the history of the natural vegetation of the peninsula. This supposition gains force from the further circumstance, that while Marblehead Neck, the only other body of land along our shore, which is similarly placed, betrays in its productions, considerable affinity with the mainland, Nahant, attached by a beach many times longer, and therefore farther out at sea, exhibits much stronger peculiarities in its flora than the other. And this is true, notwithstanding that this beach has been a thoroughfare from the earliest times, and the operation of human agencies to assimilate its productions to those of the opposite shore has been, probably, quite as active as at Marblehead Neck. Thus we are led to conclude, that the beach and its uses have effected the result but little, as to the spontaneous growth, and in this respect, Nahant, as at first stated, is essentially an island.

As all residents in the vicinity are aware, no remnant of any natural forest now exists on Nahant. I doubt if a single tree can be found, there which has not been planted by man, and that too, within a comparatively recent period. But it is a curious fact that this was far from the case in the "olden times" as history is not wanting in proofs that the peninsula was once thickly covered with woods, such as afforded an ample covert for rapacious and troublesome wild animals. Lewis has distinctly asserted this, and has not, I think, been contradicted.\* Citations from the early voyagers, as Gosnold, John Smith and others, certainly go far to establish this point, and the testimony of old William Wood to the same effect may be held, perhaps, as conclusive. This writer declares, in 1633, that Nahant was "well wooded with Oakes, Pines and Cedars"† Whatever the density of the Nahant forest may have been, it was enough to answer the purposes of the bear, which was there in 1680, and of the

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\*Hist. Lynn, p. 20,—Ib. p. 41, 42, 43.

† Ib. p. 32.

wolf, which the settlers endeavored to fence out the same year. But the efficacy of this mode must have been small, or else a detachment was left in concealment on the peninsula, for five years later, the village train band were ordered to devote their annual muster-day to the hunting of the wolves that still infested it. As late as 1698, there were five foxes killed there also, so that the stage of entire denudation could not have been reached at that time. But the process was vigorously begun some time before.

In 1657 the town, with that zeal against the trees of the forest always found in newly settled regions, ordered that the planting-lots on Nahant should be cleared of wood in six years thereafter, under pain of fine.\* Another phase in the destructive work was the liberty confirmed to Thomas Dexter to tap the pines for the manufacture of tar: resulting, as it must in that day of coarse and unsparing ways, in the extermination of all the evergreens that escaped the more summary visitation of the axe.†

But thirty or forty years showed the people that they had gone too far. Nahant had been stormed, as a castle, by the forces of the cultivator, and now he found he had only destroyed his prize in gaining it. The ameliorating influence of the trees was gone, and the land lay at the mercy of the wintry storms and the parching heats of August, without protection. In 1698, a penalty of forty shillings was adjudged against every one who should cut more than seven trees on Nahant; and six years afterward, terrified to find that there was "like to be no shade for the creatures" every one was forbidden to "cut any tree or bush there on a penalty of ten shillings.‡ They had enforced their vandalism by a fine of fifty shillings, and they now sought to repair the harm by threatening one of forty and thus saving twenty per cent. from the cost of their folly, but even this comfort they had forfeited, and nature seems to have sternly demanded the yielding up of the other two.

The woods were thus swept from Nahant as effectually as the wolves and the Indians. For a hundred years it remained, an empty, half worthless pasture: or as Lewis forcibly describes it, "a portion of foxes, a barren waste, covered with short brown grass, tenanted by grasshoppers and

\* Hist. Lynn, p. 144.

† Ib., p. 146.

‡ Ib., pp. 186, 187.

snakes''\* About that period its growing reputation as a watering place drew thither those who sought to inaugurate a better state of things. The planting of trees commenced, the White Willow and the Balm of Gilead were the pioneers, as alone able to flourish under the withering ocean winds, and under their shadow other and tenderer kinds were nourished, till to-day there is a pleasant progress toward the old woodland beauty that garnished the shores when Thorwald stood there in 1004 and exclaimed "Here it is beautiful."

Whether produced by means of this early destruction of the woods, or otherwise, there are certain points in the Nahant flora that are very singular. The most salient of these is the total absence of Ericaceous plants. Perhaps others are better informed in this than I, but I have sought diligently over the peninsula for a Blueberry or Huckleberry bush, a Lambkill, a swamp Pink or a Clethra, and have never found either. In other places the damp lands that furnish Alders, Wild Roses and June Berries, are also full of that cheat of the berry-boy, the Privet Andromeda, but there is none of it here, though its companions are reasonably common. Neither in the bushy spots about the Calf Spring or skirting the meadow behind Whitney's Hotel, can I discover a solitary Pyrola or Prince's Pine, be it never so degenerate. This however is less strange, for the long absence of shading woods would tend to the extirpation of all such smaller forms. But that not a solitary Huckleberry or Andromeda should be here, seems all the more remarkable when we reflect that it cannot be that exposure to the ocean winds has destroyed them. Until within a short period a hillock above the tide range in the midst of the Lynn marshes has borne a thrifty clump of Huckleberry bushes; and I well remember that some twenty five years since, such large quantities of berries were picked on one of the islands in Boston Harbor as to attract attention in the papers. The sea then is no way inimical to this family of plants; and their entire absence from Nahant (if I am right) is due to some obscure cause, which is yet to be elucidated.

If we visit this island, (for such it may be called) in May, another peculiar production is at once manifest. The Field Chickweed is not, perhaps, a rare plant in more northern districts, but appears decidedly such in the regions of Boston.

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\* Hist. Lynn, p. 265.

† Ib. p. 40.

Definite and systematic herborization in eighteen towns in Essex and several in Middlesex have wholly failed to procure me a specimen of this plant, though I have often examined the most favorable spots. I will not say that it is not on Marblehead Neck, as I have never sought it there at the proper season: but I cannot learn that any one knows of it being there. Yet in May, as I have said, there is no spot of unimproved land at Nahant that is not full of it. It nestles among the short pasture-grass, it creeps among the loose stones above high water on the beaches, it hangs in fringes over the brows of the iron-looking ledges. Its pure white flowers, little smaller than a dime, meet the eye everywhere; and, its herbage being almost invisible, one half believes that the grass has grown frolicsome, and laid off its old green plumes for fresh posies to salute the Spring.

It is not my purpose to go into the discussion of the cause of such a thing as this, or any other mentioned in this paper. I am alluding to them as peculiar traits in the Flora of Nahant, which go to show something of a distinct, and therefore, an insular character in her productions.

The Short Beach, connecting the two islands which are collectively known as Nahant, being formed with a greater share of upland than the other beach, and also abundantly supplied with decaying sea-weeds, has a soil, probably not without peculiar properties. In this the Henbane (*Hyoscyamus niger*) has flourished for an unknown time. It seems to be gradually losing its luxuriance, and may before long disappear, either temporarily or finally. But it is a somewhat curious circumstance that this plant, which commonly confines itself to old grounds and the neighborhood of spots long inhabited, should here fix itself upon a place where no house or work of men is known to have preceded it and occupy it so persistently for years together.

This favorable character of the Short Beach, as to soil, has made it the home of several other somewhat uncommon plants.

The Annual Wild Bean, (*Phaseolus diversifolius*), is now and then met with, along this beach, betraying its true affinities by its leaves and pods, though it seems to twine but little. It seems to be admitted that Massachusetts is the extreme eastern station of this plant; and if it is so, Nahant must be near its outer margin, as Cape Ann is to that of the Magnolias. I have heard that this Wild Bean, however, is

found along the shore near Marblehead, which may carry its limit a little farther east. At any rate, it seems not a plant of much frequency, and its appearance at Nahant is worth noticing.

Similarly, remark is due to the Downy Hudsonia, which is quite abundant on this beach, though I have never detected it elsewhere in the vicinity. Strictly speaking, this is not a rare plant, if we take the whole coast of the Northern States into account; but it does not appear within some miles of Nahant, either way.

It was stated at one time with much confidence, that a species of Pink, (*Dianthus deltoides*) had been found native on Little Nahant. The circumstance created no little surprise among botanists; for it is a species almost or quite confined to the British Islands. and this, if it were really here, would be the only instance of its detection in the Northern United States. Whether it is true that this plant is established on the island, I think it unsafe for me to say. I certainly have not found it, though I have searched carefully. Still, it may be here. It is always easier to assert a negative than to prove it, and it would be no trifling botanical honor to both Nahant and the fortunate collector, if its presence could be ascertained, and thus a choice associate be joined with the solitary wild Pink we now have, enriching the Flora of Nahant and that of the country at the same time.

I will only notice one other plant in this connection, which, though it is common enough in many places, falls into a habit here which seems a little irregular, as well as very curious. The Scarlet Pimpernel (*Anagallis arvensis*,) is said by Gray to affect "waste sandy fields." This is correct enough: it may with us more generally, perhaps, appear in gardens and cultivated grounds. But at Nahant this adventurous little thing, whose sensitive petals promptly close to presage the coming storm, stations itself, as if for this especial duty, on the bare rocks and outer crags, almost, with which the shore is everywhere fortified. Fain to forego the pleasure of a fat and fertile soil, it starts in the little crevices and chinks of the stone, where there may be a very little earth, and there it grows and flourishes, with the wind tossing its herbage about, and the salt spray dashing over it at every easterly tempest. Perhaps the like is done by it elsewhere; at any rate it is a curious departure from ordinary habits.

It may not be useful to extend these considerations further.



Perhaps the instances cited are enough to show that there are peculiarities in the flora of Nahant, tending to distinguish it from that of the mainland. It would be a very interesting study, to make careful examination of the larger islands along the coast, such as Lowell, Thacher's, and the Miseries, and then include those in Boston Harbor, for the purpose of comparing the productions of these truly insular soils with those of this peninsula. I have my suspicions that a similarity would appear among them all, and a common quality of difference from the mainland, which might furnish some clue to the cause of the facts, I have stated, at least it might throw some light on the question of the distribution of species, and would go far to verify the statement, I have already made, that Nahant is, essentially, an Island.

*Wednesday, June 30, 1858.*

FIELD MEETING AT NEWBURYPORT.—The second field excursion took place this day, and the destination for the party was selected at Newburyport. It was a fine, clear and hot day, and suitable to invite forth a goodly number of persons to partake of the anticipated pleasures of such gatherings, which are made periodically by the Institute. The Railroad train which leaves for the Eastward at quarter past eight o'clock, A.M., was selected for the means of conveyance, and an agreeable and diversified ride after a while, brought the company to a spot previously agreed upon for disembarking, at about three miles this side of the city. A small stream, called Little River, wended its way through the adjoining pastures, and as this spot was gained the region was at once seen to be of a different character from any before noticed. Along the track of the railroad and upon its bed the *Euphorbia Esula* (L.) had established itself profusely, a plant noticed by Oakes as naturalized in the eastern portions of the county, several years since. It is a native of Europe and one of the many troublesome foreign visitors in our agriculture. The surface of the rocks betrayed, by the greyish tints and peculiar lichen growths, their calcareous characters:

in fact they were the outcroppings of the ledges, which by blasting had produced the quarries of limestone so deep and cavernous as to have been for a long time designated as the Devil's Den. In the quarries, now for many years disused, are found several beautiful mineral veins, of which serpentine, and the variety called precious serpentine, predominates. Besides this the silky asbestos, the fibrous tremolite, the amorphous garnet are known to the locality. The hammer of the geologist and mineral seeker was instantly busy, while curiosity prompted others of the company to explore the passages of the shafts. The cool and moist retreat from the bright sunshine was attractive to others, and draughts of cooler water were passed from hand to mouth. Through the courtesy of several gentlemen from Newburyport, who met the company on the arrival of the train, the most picturesque spots of this wild region, with its weird and fantastic names were pointed out, and their local history defined. One of these was the "*Pulpit Rock*," situated near by. In the Neck woods we were led to another quarry, situated in a deep ravine and some of its sides were of a steep and precipitous character. This, we were told, had been extensively worked within a few years, but it was found that the cost of fuel would become too great for any profitable revenue from the lime.

At ten o'clock, several vehicles arrived to transport the company to another locality, famous for its natural scenery. A ride of five or six miles now carried us through Oldtown in Newbury, through High Street, in Newburyport, and to laurel grounds on the bank of the Merrimac River. The villages of Amesbury and Salisbury lay on the right hand of the road in the distance, flanked by the smooth and verdant elevation known as Powow Hill. The place of stopping was near the birthplace and early home of William Bartlett, a house of about one hundred and fifty years old and bearing the marks of its antiquity. The weather beaten exterior,

and the old well, near by, seemed like the olden time. A small douceur of coin, by way of toll, won the way over a slight elevation and towards some evergreens, in the bosom of which pine woods were to be found the famous laurels, fine large tall bushes of the *Kalmia latifolia* full of snowy and roseate blossoms. The laurel grounds make one of the many attractions of the vicinity of Newburyport, and are visited by select pic nic parties for the flowers and for the sweet seclusion of the spot. Not far distant is a spring of cool and sparkling water, gushing up at all seasons full of refreshment to man and animal. The noble river affords at this spot a gradually sloping bottom and clear water inviting to the bather. The eminences afforded by the cultivated fields offer on such a day as this, enchanting scenery both close at hand and near the horizon, towns, spires, woods, farms, the sky piercing hills, the gentle meandering Powow immortalized by WHITTIER, the broad Merrimac sweeping ocean-ward by marshes and meadows and Plum Island disputing its passage to the sea. The viands of the several baskets being now duly discussed and a scratch of uncertain date upon the surface of rock of considerable size, having been visited, strangely supposed to have been made by the Devil's Wheelbarrow in some of his industrious moods over its hard material, an adjournment was carried for a session at the City Hall, which was opened at 3 o'clock, P. M., the Vice President, Rev. John L. Russell in the chair. The spoils of the morning have been deposited upon the table, consisting of flowers, reptiles, insects, and the like, the business of the hour proceeded by the reading of the records of the last field meeting by the Secretary.

The donations since that time were announced as follows, viz :

*To the Library*—from the Chicago Historical Society ;  
American Geographical and Statistical Society ; Caleb Foote ;

William R. L. Ward of New York; John M. Ives; Matthew A. Stickney; Charles W. Upham; Timothy Davis, M. C.; Henry Wilson, U. S. Senate; St. Louis Academy of Science; Minnesota Historical Society; New York State Library; Montreal Society of Natural History.

*To the Cabinets*—from Charles A. Putnam; W. A. Phillips of Swampscott; John S. Ives; W. R. Wheatland; John M. Ives; F. W. Putnam; Richard H. Wheatland; M. A. Stickney; William Silver; N. C. Robbins; George Upton; James B. King; George W. Keene, of Lynn; Francis Brown; E. C. Webster; F. H. Lee,

The correspondence with the Institute by letters was as follows: from L. C. Dodge; Wisconsin Historical Society; New York State Library; Charles B. Norton, of New York, N. Y.; B. L. C. Wailes of Washington, Miss.; Chicago Historical Society.

The Chair congratulated the company upon the success of the excursion and the courteous reception it had received in this pleasant city of fine residences, elegant gardens and sylvan surroundings. The places it had visited to day were long ago familiar to him, and many an afternoon had he spent at the "Den," "The Laurels," and on the banks of the Merrimac. Scarcely a spot so famed for flowers, or never so sacred to the memory of those, who had loved and admired Nature hereabouts, but he well knew and was acquainted with. The earliest buds of the pale *Epigæa*, and the flaunting and glorious spikes of the Cardinal flower, the blue-eyed grass in the meadows and the witch hazel in the copses were familiar friends of his youth, in the days he had passed here. Here he had made the acquaintance too with many of the most beautiful blossoms of the garden, the choicest and mossiest of moss roses bloomed still in his memory, though the real plant had long since perished. To come to such a place and see about him a few familiar faces yet, was the return to one's old home. He trusted that Sa-

lem and Newburyport would be better acquainted with each other, vieing in its line of floriculture, or in kindred pursuits; and that the Essex Institute might find encouragement for some future more extensive exploration from the enjoyment, it has received to-day.

The following paper was presented by Samuel P. Fowler of Danversport upon a supposed new species of toad hitherto undescribed.

I would offer to day for the consideration of the Institute, an undescribed species of toad, found in Danvers and probably in many other places, together with its history and habits, so far as they have been ascertained. Some fifteen years since, a specimen of this reptile was sent to the Boston Natural History Society, and was pronounced by one of its members to be *Bufo lentiginosus* of Shaw and the Land Frog of Bartram.

Not being satisfied at the time, that this was the true *lentiginosus*, from the fact that its face was not full of freckles, as its specific name implied, and having expressed at the last meeting of the Institute my doubts in regard to it, I resolved during the present season to make a further examination of it. This has led me to ascertain that the reptile under consideration, has as yet been undescribed and no notice whatever taken of it by any Herpetologist. In its general appearance as will be seen, it closely resembles the common toad, but is totally unlike it so far as I have noticed in its habits and its croak. It makes its first appearance, known by its note, in the early part of June, in the evening about dusk when the season has become warm and the fire flies are seen abroad, uttering its peculiar cry, not very much unlike the whoop of an Indian.

And as the notes of the cheerful *little* peeping *Hyla* may be considered the first "Voice of Spring," so we may feel assured when we hear the unpleasant croak of this singular reptile, that the "Child of the Sun, refulgent Summer, has at last come."

In cool evenings, with the thermometer at sixty degrees, it is silent.

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In very warm and quiet evenings, in some localities, these toads are found in great numbers shrieking in concert, and can be heard at a greater distance than any of our frogs. Whether this croaking is in any way connected with its amatory habits, as is seen in the common toad, I am unable to say, and in regard to its mode of living, I am entirely ignorant. I have as yet found it nowhere but in quiet ponds, where the water is warm, or on the shore near the banks. I have noticed it in a mill pond, near the Walnut Grove Cemetery in Danvers, on the farm of the late Judge Putnam.

In closing this communication, I wish to present the following motion:

That a committee be raised to furnish a scientific description and figure of the reptile, ascertain its habits so far as may be found practicable, propose a name for it, and report to the Institute their doings at some future meeting.

At this suggestion of Mr. F., a committee, consisting of Messrs. F. W. Putnam, Richard H. Wheatland, and S. P. Fowler, was appointed.

An animated discussion respecting the hybernation of the toad, its supposed immunity from suffocation in closely confined places and its long vitality when enclosed in rocks, with imaginative authentic accounts of such latter occurrences, was carried on by Dr. H. Wheatland, Dr. Henry Perkins of Newburyport, F. W. Putnam, and B. F. Mudge. The osteological differences between the new species and that of the common toad was shown by Dr. Wheatland, by exhibiting two nicely prepared skeletons, and pointing out, chiefly, how they differed in the form and shape of the skulls. The generic distinctions of *Hyla*, *Bufo* and *Rana* with other genera of frogs and toads, were explained by F. W. Putnam. This portion of the subject was submitted to many queries, raised by Messrs. Messervy, of Salem, Dr. George Osgood of Danvers, Dr. Perkins of Newburyport, and which elicited remarks from the chair and others.

Richard H. Wheatland, mentioned, having recently received specimens of *Pomotis rubricauda* from several locali-

ties in the county. In this connection he alluded to the importance of preserving specimens of our most common fishes, which are found in the waters of our county. There are probably two distinct species of pickerel (*Esox*) within its limits, though they may have been mistaken for one and the same. It is a matter of some importance to be able to indentify such a fact as this, and the only way to do so, is by collecting as many as possible of all sizes, from the small and young ones, to the adult and oldest, and then by critically comparing them. Mr. W. thought that there exists too little knowledge of our own species, and urged upon the meeting and especially upon anglers, the presentation to the Institute of specimens, no matter how common they may seem to be, nor how many.

B. F. Mudge alluded to the existence of the extensive salt marshes in the neighborhood and to their interest in a geological point of view. From an examination into their nature and composition he believed that this part of our coast was gradually settling at the rate of two feet in a century. The occurence of stumps of large trees several feet below the surface of the marsh, and which must have grown there when it was dry land and of course when it was above sea level, seemed to furnish proof. Hon. Allen W. Dodge, dissented from this theory, thinking it possible that such a subsidence might be true of certain circumscribed localities, but could not be so general. To this it was replied that such subsidence was no novelty in geological science; and that, were other proofs requisite, it could be shown from old title deeds of real estate in Lynn for instance, dated back one hundred and fifty years, that such was really the case. It was clear to Mr. Mudge that the salt-grasses would readily appear upon the sunken upland, and in time completely usurp all the saline soil around.

C. M. Tracy of Lynn, offered additional testimony in the digging up a stump of a tree within the limits of that city,

which he found was embedded in the marsh, while under it lay strata of loam and clay. The structure of the overlying marsh appeared clearly to establish the idea that the grass had grown at successive periods, at all heights between the top of the stump and the present surface ; and considerations were drawn from the habit and constitution of the marsh grasses to show that nothing but a sinking of the district could account for the facts observed.

Mr. Mudge resumed his remarks by stating that this question of subsidence had further proof in a well characterized beaver dam in Gloucester, which had been found with the relics of beaver huts, of the wood laid up for the winter's food, and the tooth marks yet upon it, at a place which is now some two feet below high water mark and of course covered by the tide every day.

Dr. Henry Perkins of Newburyport said that the geologist might be concerned in knowing that this was a region of earthquakes, averaging one in every two years for these two last centuries and such as might be termed local. He also exhibited a peice of wood, dug up in the vicinity of "Pine Swamp," where it was found ten or twelve feet below the present surface and seemingly in or below the drift formation.

Mr. Mudge also exhibited to the Institute specimens of precious serpentine, found at "Devils's Den," and some of them in a highly wrought condition, cut into various fancy shapes, as paper weights and the like, from the hand of Mr. Osgood, an artist of Newburyport. This variety was said to be very valuable abroad, and rarely found in Europe.

The Chair commented upon some of the plants collected during the excursion.

Mr. F. W. Putnam presented a paper upon "Solanine in the potato," from L. M. DOENBACH, of the Lawrence Scientific School, which is appended below. Some discussion arose on some of the points treated, and the query proposed



whether the common idea of the growing root being exposed to the sun, rendered it poisonous, John L. Russell remarked that if there were any super abundance of poisonous principle in such potatoes, it might be accounted for on the ground that the *stem* could contain possibly the most solanine, and that such potatoes had returned to their typical forms, the *roots* so called being only subterranean and blanched, swollen stems.

On motion of B. F. Mudge the following vote was unanimously adopted, *viz* :

*Voted*, that the thanks of the Essex Institute be presented to the city of Newburyport for the kindness of the city officers in tendering the use of the City Hall, for the holding of this meeting, also to Messrs. Thomas B. Lawson, Alfred Osgood and Alfred Horton for their kind and polite attentions to the members and their friends during this day's excursion to the several places of interest in the vicinity.

After some business had been transacted it was Voted to adjourn.

## SOLANINE IN THE POTATO,

BY L. M. DORNBACH.

The following are the results of a chemical examination of some potatoes, (*Solanum tuberosum*) made at the request of my friend Mr. F. W. Putnam, in the early part of the summer of 1857, at the Chemical Laboratory of the Lawrence Scientific School, Cambridge.

The potatoes examined were taken from a lot supplied by a provision dealer to a number of inhabitants in Salem, and were suspected to contain some poisonous principle, because of the universal evil effects produced on the health of all, who used them as food. The examination was accordingly conducted with a view of discovering the noxious element.

The inorganic poisons were first excluded by the negative results obtained when the usual reagents and tests were applied for mineral poisons. But on extending the investigation to organic radicals a comparatively large quantity of the alkaloid solanine was found. This substance is found in several species of the genus *Solanum*, (*S. dulcamara*, *S. nigrum*, *S. tuberosum*, &c.) in *S. dulcamara* it exists in the berries and whole plant, in *S. tuberosum* it is found in the berries, but more especially in the sprouts formed in warm and moist cellars. Traces of it are always found in the tuber, as may readily be ascertained by the peculiar scratching sensation produced at the root of the tongue on tasting some of the raw potato. But it seldom amounts to more than one part in two thousand, and exercises little or no deleterious influence, as boiling water extracts the greater part of it. The specimens examined by me, however, contain a much larger quantity; about one part in ten thousand. There exists no doubt that the mischief produced by the use of the potato is due entirely to the solanine, for it is a very violent poison and requires but a very small quantity to produce symptoms of ill health when taken by a human being as I ascertained by a direct trial. I extracted the solanine from eighteen ounces of potatoes, on administering one tenth of the quantity obtained or perhaps one fifth of a grain to myself, it produced stupor, lassitude and general symptoms of deranged health.

The method of extracting solanine is as follows; the potatoes, after being cut in small peices or crushed with a hammer, are treated with water made acid, with sulphuric acid, in a porcelain or glass vessel, which is allowed to remain for twenty four hours. The sulphuric acid unites with the alkaloid and forms a soluble compound, solanine itself not being very soluble in water. It is then filtered through cloth, and the fluid extract treated to coagulate the albuminous matter, allowed to stand for some time that all solid particles may subside, then filtered through paper. The solanine, being very little soluble in water, is cast down from its combination with sulphuric acid by the addition of caustic ammonia to the extract, this being allowed to stand for a short time, is again filtered throught paper, when all the solanine with some other organic matter will be on the filter. This is carefully washed with water containing a large quantity of caustic ammonia, which removes nearly all the coloring

matter that was precipitated with the solanine. This residual mass is next treated with boiling alcohol, which dissolves all the solanine with a little coloring matter, if it has not all been removed by the previous mentioned treatment. The solanine is crystallised out by evaporating the alcohol and forms colorless needles or columns.

As nothing definite could be ascertained in regard to the precise locality of their growth, on the manner in which they were subsequently treated for winter preservation, it is not very easy to make a satisfactory explanation on chemical principles of these singular results. But the most provable is this, solanine is always a resulting compound in the first stages of decay, and the potatoes in question were evidently in the primitive stages of decomposition.

*Thursday, July 29, 1858.*

FIELD MEETING AT LYNNFIELD CENTRE.—The members of the Essex Institute with a party of friends took the cars on the South Reading Branch Railroad at its depot in Salem and alighted at the Montrose Station about twenty minutes past ten, A. M. This station is out of the limits of Essex County, a small stream being the boundary line between it and Middlesex County, in which Montrose lies. As the subject of these excursions belong to our county proper, and as geographical limits have no extraordinary signs to distinguish them, it was a matter of some merriment among the juniors to find they were trespassing upon foreign domains. The alleged reasons for this departure from precedents was, the nearer way it afforded to reach the centre village of Lynnfield, where the place of rendezvous was appointed. No especial harm came from this, as the naturalist and all lovers of Nature, exercise an ancient privilege of insisting upon a right of travel in any desmesnes where she invites. It was the intention of the committee of arrangements for this day, that the longer but far more beautiful road from the Lynnfield station upon the same rail road track should be taken, which would have afforded more shade

and an opportunity to gather flowers along its margin. This was found to be the better route by the return party in the afternoon, who enjoyed the pleasant and sylvan character of the road and refreshed their boquets with newly plucked blossoms copiously afforded them. The more open and sunny route, selected by error, was not however without its charms, as the law of compensation is always found close at hand in any emergency, when sought for or when met by a conciliating spirit. Berries and blossoms here and there were to be seen, and green fields and distant woods only seemed more verdant and cooler by contrast, for distance lends enchantment to the view, we are told. To the right lay stretched out in a beautiful blue sheet of water, Pilling's Pond, formed by the damming of an extensive meadow for mill privileges, and where we were assured by two healthy and sunburnt maidens, could be found the best blueberries of the neighborhood. The particular specific name of this delightful fruit we did not gather, (neither did we indeed the fruit itself) for we question whether the first lessons in botany, much less the manual of native plants had been made a text book in the public school of the district. Some sort of *Vaccinium* was doubtless intended by these amateurs in carpology, but whether *Vaccinium Pennsylvanicum*, *Canadense*, *corymbosum*, who can tell? All this would have mattered little to them, provided they brought the requisite number of cents per quart. One loves to know the names of whom and of what he loves; and we remember the gusto with which we relished some famous blue-berries once upon an occasion, when we were assured that they were the identical species first described by an eminent naturalist of old renown! But all this was a long way off, in the Notch of the White Mountains, so perhaps the locality had something to do with the enchantment. To return however from our digression, we would recall our own pleasant Scenery and roundings of our own tour to Lynnfield, enticed anon by glimpses of rural and agricultural beauty, by the chirping

of the crickets, and the grasshopper, and then by the yellow spikes of the earlier golden-rods, telling us, too truly, that autumn was stealing upon the retreating footsteps of summer time.

As the party approached the Village, a large portion of it paused at the pleasant farm-house of JOHN DANFORTH, Esq., who is the Town Clerk of Lynnfield, and who with other members of his family were unwearied in their endeavors to refresh our weary pedestrians with excellent milk and cold water. Mr. D. exhibited to our antiquarian amateurs the records of the Town, also the Church Records, which go back to "Nov. ye 29, Anno Christi 1732." Some pleasing account of these matters can be seen in some extracts published in the Salem Gazette for July 30, 1858, to which the curious reader is referred. So much for the bulk of the excursion party in their walk; as to others divers objects of interest beguiled them away. Armed with hammer and chisel, the serpentine ledges were scrutinized by the mineralogist; provided with tin vasculum the distant swamps and woods were searched for plants by the botanist and florist; and still others, few in number, but bent in careful research arriving by an earlier train spent some time the in examination of a small pond near the mills of Mr. HAWKES, whose paternal acres are located near by, having been in the family posession for about two centuries, a rare instance of fixedness and content combined with their accompaniment, thrift. This little pool was filled with many interesting species, of plants, molluscs, the larvæ of insects and reptiles, so that the exploring party found ample employment for their hands, the report of which will be found in their appropriate place.

Lynnfield, as generally known to pleasure-loving folks, is connected with the idea of an Hotel, and its noble pond, and and charming to the thought by the beauty of its surroundings, as well as by the hospitality of several well known citizens.

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izens, who have been interested in behalf of the Institute. Some delightful field meetings have been held there, described in volume I, of these Proceedings, page 12 and in volume II, page 45. The town of Lynnfield proper is, as we have intimated, what is now called Lynnfield Centre, where was situated the first meeting-house and where is a new Cemetery laid out about two years ago; a creditable movement on the part of the citizens and which bids fair before many years, to become a most beautiful spot. It was here that the REV. NATHANIEL SPARHAWK, was first minister, and ordained August 17, 1720. At the pleasant residence of Mrs. P. O. Starr, the party were refreshed by viands of their own bringing, but materially added to, by excellent tea and coffee and cold water provided by her: added to all which, a cordial welcome and many attentions rendered the occasion one long to be remembered.

At three o'clock, P. M., a session of the Institute was held in the meeting house of the First Congregational Society, the Vice President of Natural History, John L. Russell assuming the chair. The records of the preceding meeting were read by the Secretary, and the donations were also announced as follows, viz:

*To the Library*—from Samuel A. Green of Boston; Directors of the Newburyport Public Library; Boston Society of Natural History; George D. Phippen; United States Congress; City of Boston; Massachusetts Legislature; New York Mercantile Library Association; Charles K. Whipple of Boston.

*To the Cabinets*—from James B. King; Mrs. Mansfield, William A. Phillips of Swampscott; Miss Batchelder; Alfred M. Osgood of Newburyport; George Lord; James M. Barnard of Boston; R. H. Wheatland; Caleb Cooke; S. B. Buttrick; W. W. Hurd; John M. Ives; Justin Rideout; W. J. Chever.

Some letters received from the Department of the Interior; R. Damon of Weymouth, England; and from others were noticed.

The chair briefly reviewed the origin, progress and modifications of the field meetings since their first experiment; gave a short history of the Essex Institute,—urged the co-operation of friends of science and civil progress in the county to carry out the designs contemplated in its organization.

B. F. Mudge of Lynn, gave some account of his geological investigations to-day. He exhibited some pieces of felspar, which he had found during his walk from the railroad station; and he alluded to some of its uses in the arts; for instance in porcelain manufacture; in making artificial teeth, &c. He had also visited the serpentine quarry, this forenoon, which some twenty years ago had been worked for the manufacture of Epsom salts. The mine is only a small portion of a ledge of the mineral, which outcropping through the drift shows itself in several places in the vicinity. The serpentine is pure and with facilities of cheap labor, it might be profitable in the making of Magnesia and Epsom salts. The mineral, he said, was more pure than that of Newbury, at the Devil's Den, visited not long since by the Institute; but for verd antique marble, it would not prove to be so beautiful: an elegant specimen of this particular variety was to be seen in the pedestal of the new FRANKLIN STATUE, in Boston, and which was quarried in Roxbury, Vermont. The beauty of serpentine as verd antique marble consists in the mixture of white limestone, which diminishes its purity as a mineral just in proportion as its white, wavy lines predominate. Dr. Charles T. Jackson examined this quarry in 1837, and pronounced it to be verd antique of various shades of green, from the darkest olive to grass green. He found it to form an enormous bed, running in a north-east by north, south-west by south direction, and appearing to dip to the north west about  $45^{\circ}$ . The soil covers the rocks which

include the bed, but they are probably greenstone trap and sienite. The serpentine itself was found by him to be naturally separated into blocks, or sheets from three to eighteen inches thick and from two to four feet in width. Analysis of themineral gave Dr. Jackson the following results ;

Silex,	37 grains.
Magnesia,	42 “
Oxyde of Iron	2 “
Water,	15 “
Loss,	4 “
—100 grains.	

Mr. Mudge next referred to a so called copper mine at a place in Lynnfield, specified as Tophet Hill. Some fifteen hundred dollars raised by contribution from individuals in Charlestown and other places, were expended upon this spot directed in the research by an Englishman, by the name of Kingsford, who sought with divining rods after the precious metals, such as platina, copper and other valuable ores, which he pretended were concealed there. A shaft in the sienitic ledge had been sunk to the depth of twenty-five feet, which was met by a horizontal excavation seventy-five feet from the foot of the hill to meet it. For this great outlay they obtained it is said a few bits of copper, and some very thin layers of micaceous iron ore of no useful value. Mr. M. had seen these specimens, and the *platina* was the micaceous iron, which the empiric declared he had fused in a skillet, ingorant that platinum was the most infusible of the metals. Such instances of charlatanry and credulity are too common among us in other subjects besides metallurgy. Good specimens of the magnetic oxide of iron, smoky quartz, and of felspar, obtained by him at the railroad excavation were exhibited by Mr. Mudge to the meeting. Lynnfield, he assured it, also affords schorl, fluete of lime, asbestos, graphic granite and other minerals. The sienite quarries are also extensive, and might hereafter prove an important revenue to the town. The character of the rock is as good as that of Quincy.



Mr. Joshua Hewes sent to the table for exhibition a beautiful specimen of the serpentine, cut and polished in the shape of a small book and which was much admired.

Dr. Richard H. Wheatland stated that since the last Field Meeting, several specimens of fishes new to this vicinity had been presented to the Institute, among these were a large number belonging to the Genus *Motella*, taken alive at Nahant, by Caleb Cooke; this fish is very rare on our coast, a few specimens only having been to his knowledge, previously found, at Provincetown by Capt. N. E. Atwood, and Mr. H. M. Smith, and at Chelsea Beach, by Prof. Agassiz; the specimens we have differ from the *M. caudacuta* of Storer, sufficiently to make it questionable, whether they belong to that species. Three specimens of *Leptocephalus* sp. hitherto exceedingly rare, were also found by Caleb Cooke at Nahant; a single specimen presented to the Institute some years since by GEORGE H. DEVEREUX, Esq., and found by him at Cherryfield, Maine, furnished Dr. Storer's description, in his Synopsis of the Fishes of North America; and another found by Prof. AGASSIZ at Charleston, S. C. being the only others known in these waters. Dr. W. also cited the case of a *blenny* found adhering to the shell of a barnacle taken from the bottom of a vessel recently from Africa, as another instance of rarity in the donations to the ichthyological department, likewise the occurrence of the *Centropristes varius*, which is more commonly to be found on the other side of Cape Cod.

George D. Phippen offered the usual remarks upon the flowers of the morning's gatherings. From these he selected such as he deemed most worthy of notice, and spoke at some length upon their beauty, variety or other peculiarities. The following list comprise the species noticed by him.

*Near Hawkes' Pond*,—*Utricularia purpurea*, *U inflata*, *Lobelia cardinalis*, *Cuscuta Americana*, *Eupatorium purpureum*, *Pontederia cordata*, *Nuphar advena*, *Mentha borealis*,

*Lysimachia hybrida*, *Asclepias pulchra*, *Campanula erinoides*, *Sium latifolium*, *Thalictrum corynellum*, *Potamogeton* sp.

*Found elsewhere during the Excursion*—*Castanea vesca*, *Pyrola rotundifolia*, *Epilobium spicatum*, *Gnaphalium margaritaceum*, *Cephalanthus occidentalis*, *Hypericum perforatum*, *Spiræa alba*, *S. tomentosa*, *Prunella vulgaris*, *Nymphæa odorata*, *Lilium Philadelphicum*, *L. Canadense*, *Potentilla floribunda*, *Geum album*, &c.

Mr. P. stated that any one, who had a fair knowledge of the plants of any region however limited, held in his hand a key, as it were, to the productions of other parts of the world; so representative were species of plants of each other, take for instance the orchises of our swampy meadows, and we were reminded of the magnificent orchidaceous flowers of the tropics; and in the singular and humble dodder, (*Cuscuta Americana*) he could fancy he saw the parasites of the hotter zones of the world. The attention to rearing this leafless climber from seed had rewarded him with some curious results which he intended to communicate at some future meeting.

B. F. Mudge made a few remarks in reference to the valuable addition that has recently been made to the library, viz: the complete files of the Documents printed by order of the thirty fourth Congress, received from the Department of the Interior in conformity to an Act recently passed, directing a copy of all such documents, &c., to be deposited in some library in each Congressional District, to be designated by the representative of the district. The HON. T. DAVIS, having selected the library of the Essex Institute for this purpose, Mr. Mudge moved the passage of the following vote, which was unanimously adopted, viz:

*Voted*, that the President of the Essex Institute be requested to communicate to the Hon. Timothy Davis, the Representative in Congress from the sixth district, the expression of gratitude for the interest he has manifested in the society by the transmission of documents at various times,

and in placing its Library among the recipients of all documents printed by order of Congress or of either of the departments.

George D. Phippen, after some preliminary words regarding the hospitality and kind attentions of the citizens of the town offered the following vote which was unanimously passed.

*Voted*, that the thanks of the Essex Institute be presented to the members of the first Congregational Society of Lynnfield for the use of their meeting house in which to hold this meeting;—also to Mrs. P. O. STARR, and to other citizens of Lynnfield for their kind attentions to the members and their friends during their excursion this day.

*Voted*, to adjourn.

*Wednesday, August 18, 1858.*

FIELD MEETING AT NORTH DANVERS. By invitation of "Ladies' Circle for the study of Natural History in North Danvers," a Field Meeting was called together to explore in the vicinity of Swan's Crossing, upon the Essex Rail Road. This neighborhood may be considered as especially favored in point of graceful sociability, refinement of taste, and love of reading and science, and the "Circle" devotes itself, as often as once a week, throughout the year, to the discussion of matters pertaining to botany and other kindred topics, and has collected a good many specimens of much value and interest. The place of deposit is at the residence of Mrs. Kettelle, the birthplace of GEN. ISRAEL PUTNAM, and from a brother of whom she is a descendant, a lady who renders a visit to this venerated mansion both instructive and delightful, and who unites, in her regard for revolutionary times and relics, a love for floriculture, filling her small garden with such choicest botanical plants, which will endure in northern climate. Close by, too, is the farm of Edward D. Kimball, Esq., laid out skillfully under the direction of

Horace W. S. Cleveland, the landscape artist, and here conspicuously located stands his beautiful residence commanding an extensive landscape on every side. Near by are likewise the farms of Messrs. Charles Lawrence, Stephen Driver, and William A. Lander, all possessing their own intrinsic beauty. Many of the party preferred to pass the most of their time in visiting these several places and renewing former acquaintances, or enjoying the rich and varied scenery.

Having in view certain objects to be obtained by a more extended ramble, with two or three scientific friends we took the early train of cars and stopped at the Middleton station. Our first intention was to visit the waters and banks of the large pond just beyond the village, but on arriving there we concluded to follow the devious meandering of a small brook which flows from the pond and to see what such a region might afford. The country was unusually beautiful from a freshness and verdure imparted to it by the late copious rains, reminding one of vernal newness than of the closing summer time, when usually the dried herbage tells of drought and heat. Through the manner in which we walked, loitered and looked about us, the long forenoon was spent before we reached Ipswich river, into which the brook pours its tributary waters. But in these saunterings, many things of interest were met with; the habits of many species of frogs and the capture of some in their junior and adult state; of these the *Rana fontinalis* and the *R. palustris* were found to be most abundant; two species of Bream were captured by the angler, among other fishes taken; several insects both aquatic and terrestrial were noticed; the under surfaces of the broad leaves of the yellow water-lily were scrutinized carefully for the molluscs; they affording *Planorbis*, *Lymnaea*, &c., &c. Occasionally was seen a spike of purple fringed orchis, or the rich cardinal flower, and many choice blossoms could be had for the gathering. As we at length struck from the meadows for the bed of the railroad track other forms presented themselves, and the little plants which

delight to grow in gravel, and which help to make "the desert" gay now appeared in profusion; and divers shrubs fringing the sides and steep banks showed how kindly Nature covers up the intrusive works of man and throws into the air her waving branches and green twigs from seeds borne by winds or wintry storms. The road-bed of railroads show many a novel feature in the way of botany, and the naturalist can find on denuded rock or gravelly track, strange and rare doings after nature's fashion. Witness how soon the pines spring up there, and willows are sown in straight lines, as if by hedge-makers. And how nobly the blackberry beds itself, all laden with tempting fruits, and how pearly everlastings greet the traveller in their perennial purity. Of such chance willows we encountered a superb cluster of the *Salix lucida*, such as would grace any garden or gentleman's private grounds.

It was now past noon ere we met our main party, who, arriving in later trains, entertained itself as before described. Grouping themselves after their own tastes it was a pleasant sight to witness the encampment of so many, in a grove at the crossing of the Newburyport turnpike and the old county road. The thoughtful attention of friends near by, furnished ample table accommodation, with refectations of tea and coffee and such harmless liquids, to eke out the picnic feast. After an earnest discussion of the viands and examination of the interesting premises, the afternoon meeting was held at 3 o'clock in the District School House, which had been tastefully trimmed and ornamented with wreaths of evergreen, of oak leaves and flowers.

The Chairman of the meeting, Rev. John L. Russell, Vice President of the department of Natural History, offered a few remarks as introductory and in accordance with his feelings awakened by being on the spot, which not only told of a hero of the Revolution but came nearer to him in remembrance of a friend. Well and pleasantly could he recal

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a visit many years ago to this vicinity with Dr. ANDREW NICHOLS, who loved every tree and every living thing about his paternal estate and whose goodness of heart made him beloved by all who knew him. The minutest forms of vegetation did not escape his eye, and what value were his explorations, let the tribute to his labors in botany, in the preparation of the *Florula Bostoniensis*, by the frequent mention of his name, bear witness. The first President of the Essex County Natural History Society, since grown into the Essex Institute, he was one of the originators of these field meetings which have become so popular, and which lend so much to make us known to others out of Salem. It was proper that we should find such memories uniting the two branches of our present Society, and that the antiquarian and the naturalist should walk together hand in hand. In these woods and swamps too, had the earlier botanists of our county often wandered and found the rare and the beautiful plants so easily found now by the remembrance of where others discovered them. Some it is true have disappeared from localities designated as their place of growth, and are seen no more, as alas! they are not, who first plucked them, but let not oblivion cover their names and these floral associations forever.

The records of the preceding meetings were now read and the donations announced as follows, viz :

*To the Library*—from L. A. Huguet-Latour of Montreal, C. E.; General Association of Massachusetts; Charles W. Upham; S. A. Greene of Boston; Richard Edwards of Saint Louis, Mo.

*To the Cabinets*—from Waldo Thompson of Swampscott; John N. Martin; James A. Dodge; S. B. Buttrick; William E. Carlton; Thomas C. Dunn; Matthew A. Stickney.

S. A. Greene of Boston, by letter requested exchanges to complete sets of documents and reports of certain societies.

The action of the Horticultural Department being under consideration, and laid over to this time from the regular quarterly meeting held on Wednesday, August 11th, the following vote in reference thereto was unanimously taken ; *Voted*, That the Curators of the horticultural department, with the secretary and the librarian be a Committee to consider the expediency of holding an Exhibition this season ; and if they decide in the affirmative, that they be authorized to make all necessary arrangements to carry the same into effect.

On motion of the Secretary, Dr. H. Wheatland, the committee who was appointed two years since and who last year reported on the subject of Lightning Rods, &c., (see page 161, &c.,) were requested to renew their observations and to report from time to time such facts in connection therewith and all other matters pertaining to meteorology as may come to their knowledge. This Committee consisted of Messrs. Jacob Batchelder of Salem, Samuel P. Fowler of Danversport, Benjamin F. Mudge of Lynn, R. H. Wheatland and L. R. Stone of Salem.

In reference to this subject some remarks were offered by Messrs. Samuel P. Fowler and Hon. Allen W. Dodge, and on motion of Mr. F. the Hon. A. W. Dodge was added to the Committee.

The first part of volume 2d of these Proceedings were announced by Mr. S. P. Fowler as ready for delivery. The entire series, or parts could be obtained by subscribers or others by calling upon the Secretary. Mr. F. proceeded to give some account of the publication ; speaking of the importance of published doings of all societies, they containing and thereby diffusing many important facts in civil and natural history, which otherwise would become lost or greatly obscured by tradition. He urged upon the members and upon all interested in general knowledge, the necessity of

subscribing to this work, in order to aid in defraying the expenses incident thereto.

Several new members being balloted received the requisite number of votes and were elected.

It being found that the school-room was too small to accommodate the company, by the suggestion of the local committee of arrangements and through their aid, it was unanimously moved and carried that the remainder of the afternoon session be held in the grove, to which the party adjourned.

On re-assembling, the Chair called upon Mr. C. M. Tracy, to offer some remarks upon the flowers and plants, which he had found in his excursion to-day. His observations upon several species were listened to with great interest and attention. He exhibited several species of *Gerardia*, the *Clematis*, *Cuscuta*, *Clethra*, *Lobelia*, &c., &c.

Mr. F. W. Putnam made some excellent remarks upon the geographical distribution of fishes, specifying several districts to which the species were limited and are not found widely distributed, forming as it were *islands*, so circumscribed were the habitats of some particular species: and that except in one or two instances perhaps, the fishes of the American coast were not identical with those of the European. He also alluded to the so-called "water system of fishes and showed the way in which this was carried out in several genera. He instanced the genus *Hoplostethus*, Cuv. belonging to the family of *Berycidae* as having a system of canals leading over the head to the sinus of the heart, developed to a very great extent. The so-called lateral line in fishes belongs to this water system. He gave the different views entertained by several anatomists, and concluded by saying that, as yet, very little was known in regard to this water system.



Dr. George Osgood of Danvers, for many years an inhabitant of this town, and who may be considered the father of botanical research in this part of the county, the friend of Nichols and had herborized with him and furnished him with plants to be described among his own in the *Florula*; the instructor of OAKES, and still retaining his love for flowers and science, exhibited to the meeting the flowers he had gathered during the day, relating many anecdotes connected with them. He said it was now some fifty-seven years since he began to observe the flora of this vicinity; that his zeal was in no wise impaired; and that on each new season, when the buds began to swell and the flowers to bloom, he felt as if he had a new lease of life; and that such would be the experience of every one, who studied botany for its wonderful objects of instruction, profit and pleasure.

B. F. Mudge of Lynn, made the fructification of the oaks a subject of his remarks, exhibiting branches of some species occurring in his walk to-day; spoke of the time requisite in ripening the fruits of different kinds of trees, of which he instanced the sea coco (*Laodoicea Sechellarum*) needing as he averred, several years to mature its nuts: they being filled with a delicious, milky fluid for the first two years, and thus much sought for by the natives for the purposes of food. This palm grows in the Sechelle groups of islets of the Indian Ocean. He spoke briefly likewise of the geology of this vicinity, alluded to his examination of a mine worked once for copper, though containing scarcely a trace of that metal; had been unsuccessful in procuring any specimens of interest to him this forenoon, unless it were a stratified stone casually picked up and looking like what occurs at Nahant; mention of which will be found in the account of the field meeting there, in our preceding pages.

The process and utility of girdling or "ringing" the fruit branches of trees and of the grapevine, were described by Mr. John M. Ives, in the course of whose remarks some points of

a physiological character being raised, were dwelt upon at length by Messrs. A. W. Dodge, B. F. Mudge, Mr. Ives in explanation and by the Chair.

Dr. Richard H. Wheatland cited the instances of two specimens of Shark hitherto new to our county, the *Carcharias griseus* of Ayres, being washed ashore at Swampscott on the 3d of the present month. They were first recognized to be this species by Dr. J. B. Holder of Lynn. A living specimen of the tortoise shell turtle (*Eretmochelys squamata*) of the Pacific Ocean, procured from the Fiji islands, had been presented, according to Dr. W., to the Institute by the generosity of Capt. Thomas C. Dunn of the barque Dragon.

After prefacing a few remarks on the hospitality of the people of the vicinity, S. P. Fowler moved the following which was unanimously

*Voted*, that the thanks of the Essex Institute be presented to the ladies composing the circle for the study of natural history, and to other inhabitants of North Danvers for their hospitality, kindness and attention towards the members of the Institute and their friends, during their excursion this day.

It was then *Voted* to adjourn.

*Wednesday, September 8, 1858.*

**FIELD MEETING AT MARBLEHEAD NECK.** A fine clear and lustrous day this, which was devoted to a search into the wonders of the bold promontory, which helps to landlock the deep waters of the harbour and render it a safe resting place from storm. The train of cars was unusually long which took the multitude over the branch rail road and from which it issued to wend its way, as fancy or inclination dictated, in and about the old, respectable and quaint town of Marblehead. "For more than twenty years," says the Essex

Memorial\* "Marblehead was a component of Salem. The earliest settlement is supposed to have been made in the neighborhood of Salem harbor, near what is still called the Ferry, and where, for many years, was the only communication between the two places, by means of the ferry boat. There were probably settlers on this side nearly as soon as on the other." As early as 1635 it was voted by the General Court "that there should be a plantation at Marblehead." So it would appear that the name was affixed to this spot before the town was incorporated.

It were worth any one's while to spend an hour or so in exploring the streets, bye-ways and lanes of this picturesque town. The visitor would find himself scaling giddy heights in quest of some access to a street above him, or wondering how the houses clung so pertinaciously to the rocks, or how the "gardens grow" amid the crevices of the stones; or how he shall be able to thread his way through some narrowing avenue. To the honor of the inhabitants, every civil question receives a polite and civil answer, and places of local interest are readily pointed out. The ocean view from "the Fort" is fine at any season of the year, and for a summer's afternoon we scarcely know of a better place for beauty and quiet. The finny tribes seem to be familiar with these properties and delight to frequent the waters, which wash against the rocks, and by the manner in which they are hourly captured, seem equally delighted to be taken by wily angler armed with rod and line and hook. Here also are many beautiful seaweeds growing in the cold tide water, corallines spreading their rosy branches in little pools, and crimson stains of the *Hildenbrandtia* relieved by inky patches of *Verrucaria maura* painting the smooth surfaces of the rocks and helping with the veins of felspar and quartz and other mineral matters to make the "marble" of Marblehead.

The approach to the Neck is by a short beach of sand and rounded pebbles dividing a part of the harbour from the ocean, or else by taking boat or some such small craft and

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\*The Essex Memorial for 1836, by James B. Newhall, 1 vol. 16 mo. Salem 1836.

crossing to a convenient wharf on the premises of the farm of Ephraim Brown, jr. Esq. Many availed themselves of this latter conveyance, especially the ladies, who wished to try the unknown seas. The ferriage, though short, was successfully pleasant and in some instances prolonged into further adventure on the deep. It was our fortune to be attached to a party, which essayed the exploration of the entire shore, even to the Ultima Thule of the Light House and its picturesque surroundings. The sun's fervent heat made visible effects upon those, unused to its glare, as we traversed the beach ; but the ocean breeze seemed, perhaps, the more refreshing. To some the plants, which grew upon the salt sands were novel in their botanical experience and gave an interest to the stroll. To others the deliquescent Medusæ, offered attractions. Thus we won our way over sand and rock and around headlands of stratification. Sometimes a polished and bold granite mass rounded by waves and storms disputed our passage sometimes a deep fissure, cavernlike and cool spoke of an ancient basaltic dike now completely washed out and dissolved. Sometimes we encountered piled up layers of banded porphyry like leaves of some book a little tilted out of place. But all wore a changed look, as if once the elemental fires burned fiercely and did their best to produce strange things and rare, such as were fitting for a frame to the mirrored ocean which it enclosed, as with a wall of adamant.

The place of rendezvous was the seedroom of the farm, offered us by the proprietor. Mr. Brown's farm indeed occupies a greater portion of the Neck, and its well tilled fields resembled large beds of a garden. The land under cultivation and tillage is about 240 acres. We found 25 acres under hoe culture, and the hay crop is annually about 100 tons. A field of onions quite free from rust and fly promised a harvest which might cause "tears of joy." These are the Danvers yellow onions, and the produce of this year will be about 1500 barrels. Besides this single root crop, there

are 4000 marketable cabbages raised to the acre, besides carrots and squashes. The facilities for sea manure renders this farm of great practical value. Those of the party, who visited the premises, pronounced the buildings, stock and management of the farm of the very best character. Such farming indicates that horticulture and agriculture are so closely associated, that the examination of such a farm might fall under the province of the horticultural department of the Essex Institute, and appropriate as well as legitimate for a subject of a field meeting.

After the usual devotion to the contents of the baskets and libations from the spring of cold water, the Institute held its meeting, the Hon. B. F. Mudge, one of its members presiding.

The proceedings of the last meeting were read from the records, and the donations were announced as follows, viz :

*To the Library*—from Alpheus Crosby ; Connecticut Historical Society ; D. F. Weinland ; Montreal Society of Natural History.

*To the Cabinets*—from N. Cleaves ; W. J. Chever ; Geo. Osgood of Danvers ; L. AGASSIZ ; J. H. Chaney ; C. A. Putnam ; M. A. Stickney ; D. F. Weinland of Cambridge ; F. W. Putnam ; Caleb Cooke ; Gilbert L. Streeter ; C. R. Fabens ; and C. A. Robertson of Cambridge.

Letters relating to the "Historical Collections" of the Institute, and in acknowledgment of receipt of publications were noticed. Also a communication from Rev. Gardner B. Perry of Groveland on "Lightning" was referred to the Committee on the subject of meteorology, appointed at the last meeting.

Some erroneous statements having been made relative to the sun-fish, jelly-fish or Medusæ lying upon the shore, Rev. John L. Russell, Vice President of the department of Natural History, presented a paper on the subject.

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ral History took the opportunity to explain the general structure of these animals, a fine large specimen being placed upon the table before him. Its cellular structure; its mode of capturing its prey; its stomachs and organs of digestion; its locomotory powers; the minute proportion of solid matter in comparison with its bulk and other particulars were made interesting to the audience. On conclusion of his remarks Mr. R. assumed the Chair and called upon Mr. JAMES J. H. GREGORY, of Marblehead, who furnished the meeting with his views of the GEOLOGY of Marblehead.

The little peninsula of Marblehead (embracing a territory of about 3500 acres) is mostly of primitive formation. The northern portion of the peninsula is a deposit of Greenstone, intersected at various angles with dikes of the same rock, in which the felspar is more comminuted and the hornblende in greater proportion than in the mass. In the southern section, the Syenite contends with the Greenstone for supremacy, and affords a fine proof of the theory of a distinguished Geologist, that the eruption of Greenstone and Syenite were simultaneous, for here these two rocks are thoroughly intermingled, here a small patch of Greenstone and there a patch of Syenite occurring in the same ledge, as though the mineral constituents boiling up together, the quartz had displayed an elective affinity, in its arrangement.

On the portion of the town, popularly known as the "Neck", a smaller peninsula connected with the mainland by a sea-washed isthmus—we find deposits of Greenstone, Syenite and Porphyry for the most part very distinct, though occasionally the Greenstone grades into the Syenite and the Porphyry is somewhat affected by its neighbor rock. The Porphyry occurs under three varieties as regards the structure of the deposit, in ledges having a cleavage tendency, but only developed so far while in process of cooling as to shatter the rock into small angular pieces, whose angles roughen the surface as though studded with spikes. A fine illustration of this form of deposit occurs in the abrupt ledge which makes the termination of the long beach, on the southern side of the isthmus, at the beginning of the Neck. A second form of deposit presents the cleavage planes so far advanced that perfect rhomboids are not unfrequently met with.

South-east of the light-house, well jugged into the sea, occurs a ledge of the second form of deposit. The third form of deposit occurs in slabs of exquisitely banded or watered Porphyry, which, with a thickness not usually exceeding two or three inches, overlay each other, forming a bed which makes an angle of about  $30^{\circ}$  with the horizon. Probably the finest specimen of this structure is the bed that outcrops along the shore, a few rods south-east of the wharf of Ephraim Brown, Esq., on the harbor side of the Neck. Beautiful pebbles of the banded Porphyry may be found on the seabeaches of the Neck. The ledge is well worthy the attention of those wealthy amateurs, whose tastes, sustained by ample means, look across the water to the ornamental stones of Europe for decorations to their dwellings. A mantlepiece, made of banded Porphyry, would be unique and would draw more attention than all verd antique in Boston, and for aught we know as yet, its inherent beauty would sustain the curiosity, that the rarity had awakened.

When will the man of wealth and taste appear, who, standing head and shoulders above the crowd of weak imitators, will exhibit to, admiring friends instead of the foreign marble, tables of mosaic made from the Serpentine of Newburyport, the marbles of the western sections of the State, the Tourmaline rock of Chesterfield, the Beryls of Royalston, the Porphyry of Marblehead and Lynn, and the various ornamental rocks which occur in his native State?

Passing from the town proper to the adjacent islands, we find the rock in state to be of the same character as on the mainland. The small, almost perpendicular rock that forms a conspicuous mark far out at sea three miles from the nearest land, known as "Halfway" rock, is of the hardest and purest Porphyry of a rich purple hue. I am told by our fishermen that a shoal is distinctly traceable from the mainland on the neck to the island, indicating a simultaneous origin. Occasionally in the midst of the Greenstone a jagged, out-cropping ledge of pure quartz protrudes, of a brownish-red color, from the presence of a small percentage of iron. An example of this may be found at the left of "Oakum Bay", on the road to fort Sewall.

It will be seen from the above that the primitive rocks abound in Marblehead; they present themselves with the characteristics peculiar to them, they stretch along a shore

proverbially rock-bound, the Porphyry presenting a perpendicular bristling front, while the Greenstone and Syenite piled in massic irregularity along an uneven coast, meets the waves of old ocean with grand sublimity that their mightiest efforts cannot surpass.

Below the tide line, the surface of the Syenite and Greenstone is of a very dark iron-brown color, while above when bare of lichens a lighter brown prevails, indicating the small percentage of iron present in the hornblende. The surface of these formations crossed and recrossed by thousands of veins of various colors, present a striking aspect. President Hitchcock points to a ledge on the shore just at the left of the entrance to Beverly bridge, as an illustration of numerous epochs of irruption. This ledge presents the same aspect with nine-tenths of the surface rock of Marblehead. I hesitate much before differing from so learned and experienced an authority, but from examination of the surface as it exists on a far greater scale in this town, and a hasty examination of the ledge the Professor alludes to, I am persuaded that his inference needs to be greatly qualified, most of the veins, though apparently crossing each other, being veins of segregation rather than veins of injection.

Much of the surface of our ledges, suggest the appearance of the scum, which rises to the surface of a boiling kettle, whose contents are impure; should this scum be petrified, while in act of boiling, it would present for the most part the appearance on a small scale that many of our ledges present, or a larger, modified by the elective affinity included in the theory of segregation. Examples of this abound; a fine illustration on a small scale may be found on the surface of the ledge exposed near by the chapel of the Congregational Society in Pearl street.

On the northern portion of Naugus Head, bordering the water, may be found very fair specimens of Gneiss, the mineral constituents of the Syenite rock there taking this mechanical structure. Along the coast line of the town, but especially on the ocean side of the Neck, a number of dikes have been excavated from twenty to one hundred and twenty-five feet by the action of the waves. On the Neck these Purgatories are in some instances not far from forty feet in perpendicular depth, and the hollow, cavernous sound of the waves rushing through them in our north-east storms



ending in a thud that makes the earth tremble, followed by sheets of dashing spray, heightens the sublimity of the scene. The structure of the Greenstone rock which constitute these dikes, some of which are three feet in width, being somewhat columnar and the line of direction being at right angles with the coast line, facilitates the excavating action of the waves. The vitrified sides of these Purgatories are a striking proof to the young geologist that their contents were once fused. On the surface of a dike, in a large, isolated bluff of Syenite forming one side of a sandy beach on the ocean-side of the Neck, nearly opposite the north extremity of Tinker's Island, may be found a fragment of the Syenite ledge weighing two or three pounds, about half immersed in the Greenstone at the surface of the dike, and within a few inches may be seen its original place in the ledge. I have never met with a more conclusive proof than this that the contents of these dikes came up in a fused state after the Syenite had cooled and become solid. The northern sides of the hills of Marblehead, (and all her hills are ledges,) are abrupt while upon the surface of the formations, whenever laid bare, may be readily found a rounded surface abounding with scratches, that are readily distinguished when the sun is near the horizon, evidences of drift action.

In the northern section of the town but little drift is found, which in the southern section begins the great drift plain, extending, with varying width, a distance of about two miles. The substrata of the plain varies in different portions, but is mostly of a rather coarse gravel, though some portions, rest on deposits of sand. On a ledge which outcrops on High street, presenting a level surface, near the residence of Mr. Thomas Swasey, may be seen several fine illustrations of what I must assume to be marks of glacial action. At the southern extremity of the township, near the Salem road, not far from the Rose farm, are vast natural depressions in the earth, popularly known as "The Dungeon." The largest of these is almost a perfect oval, from two to three hundred feet across and of great depth. The only theory that will plausibly explain their origin, is, that which supposes them to indicate the places where some of the icebergs of the drift period grounded, the deluge of water still having power to bear along the gravel in its course, which filled in around the grounded and rounded icebergs; in the course of time these melted and left their moulds in the depressions that now meet the eye.

The peninsula of Marblehead extends north-east into the ocean. It might be inferred that this direction of its extent was produced in time, by the powerful action of the waves in the north-east storms, the heaviest storms that visit the coasts of New England. Such an inference, a study of the geology of the peninsula for the most part, disproves. The direction in which it extends into the ocean arises from the fact that the strike of the ridges of Greenstone and Syenite is in a north-east and south-west direction. The northeast portion of the township is made up of six or seven of these ridges, having this general bearing, with intervening vallies having a direction corresponding. With this knowledge of the general formation of the town we are prepared for the study of the harbor, famed as one of the deepest harbors on the Atlantic coast. Was the harbor excavated by the action of the ocean, or was it originally a natural valley?

The main streets of the town run for the most part along the courses of these natural vallies. As we pass from one valley to the next, going towards the harbor, we find ourselves descending from terrace to terrace; for example in passing from Back street to Washington street either by way of Mugford street or Pearl street, we find ourselves making an ascent up the intervening ridge and then making a greater descent into Washington street. If now we still continue on towards the harbor, either by way of State or Darling streets we find ourselves still descending until we reach the street bordering the harbor, and but a little elevated above its surface. We stop here and at once draw our inference that stretched out before us lies another of these natural vallies into which the waters of ocean poured in that early day when the fiat of the Almighty sent them on their rejoicing course over the surface of our planet, led on by the law that they should seek their own level.

In the mass of waste rocks that compose our wharves is a great quantity of nodules of flint, occasional specimens of Brown Hematite and masses of Sandstone abounding in petrified shells; specimens of each of them, but more particularly of the flint stones may be found scattered along our sea beaches. These, tradition says, were brought from Bilbao, Spain, as ballast, our fishing vessels having in former years been freighted with fish for that port, returning in ballast. After a great storm in the year 1850 or '51, many

of the wharves having been severely injured, large quantities of these nodules and masses of Sandstone were exposed. I found the Sandstone abounding at the southern end of "Shirley's" wharf, and the flint stones at most of the wharves. I am informed that large quantities of this Sandstone was, in at least one instance, carted into the interior of the town and used as filling-up material in low land ; I note this fact to explain what might present itself as an anomaly to future observers.

I hardly feel free to close this somewhat extended article without a single allusion to the wearing action of the ocean on the land ; instances of this constantly meet the eye along our coast ; every little bay and inlet, telling its tale of erosion and being witness to great changes in the ancient coast-line. Nor has this degrading action of the ocean yet reached its limit ; not a storm of great violence occurs without leaving its destructive mark along our shore line. Two prominent illustrations of a probable change of the coast line by ocean agency may be seen in the great curve that sweeps in from "Bartoll's" to Skinner's Heads", also in the great curve that begins at "Bass Rock", in the northeasterly extremity of the town and trends away to the south-west towards the entrance of Salem Harbor.

Formed for the most part from the decomposition of her primitive rocks the soil of Marblehead, though scanty, is proverbially strong covering our pasture lands that have been closely fed for over a century and a quarter without any cultivation or manuring with a carpet of white clover during the rainy season. The soil of our islands is so amazingly productive of the grasses as to set all the attempts of the chemist to explain the fact from the chemical composition of the soil at defiance ; no one can realize it until they have visited them during the growing season, (Baker's island is an instance) and I challenge any one to explain it by any theory that does not ascribe an influence far greater than has heretofore been customary to the qualities communicated to the air from the surrounding ocean.

The absorbing topic of the Atlantic Cable was introduced by the presentation, on the part of Mr. Moses G. Farmer, of a piece of that portion submerged in Valentia Bay last year ;

fifty-three miles length of which were subsequently recovered uninjured. Mr. F., also on being interrogated, explained the electric working of the apparatus and elucidated the causes of the retardation experienced in transmitting the current.

Mr. C. M. Tracy of Lynn remarked that this was his first visit to Marblehead Neck on botanical research. He was pleased to find the scenery so fine and similar to that of Nahant. He had gathered a large collection of plants, of which some are here noticed, namely.

Chenopodium glaucum,  
Polygala cruciata,  
Polygonum Pennsylvanicum,  
Cakile Americana,  
Euphorbia polygonifolia,  
Teucrium Canadense,  
Solidago lævigata,  
Ligusticum Scoticum,  
Lathyrus maritimus,  
Xanthium echinatum,

*Antirrhinum linaria*, a remarkable variety, with white flowers, from the gravel of the Rail Road track near the Swampscott station.

A specimen or two of *Parnassia Caroliniana* had been handed to him, but from what locality was not stated.

Several new members were elected and the following vote of thanks was passed :

*Voted*, that the thanks of the Essex Institute be presented to EPHRAIM BROWN, JR., Esq. for his kindness and courtesy in tendering to us the use of his house and premises for our field meeting this day, and to other friends in Marblehead for their attentions towards our company.

*Voted* to adjourn.

*Friday, October 8, 1858.*

**FIELD MEETING AT ESSEX.** This was a cool but rather pleasant day for the season of the year. The excursion party was not so large as had been known on other occasions, but there was an earnestness that was commendable. The train leaving Salem at a quarter past eight A. M. was rendered available to transport those, who wished for its accommodation, and the town of Manchester being soon reached, a pleasant walk through the woods, by the public road to Essex was made at once. Others availed themselves of the advantages of a stage coach of ample dimensions waiting for freight. Scarcely any other road for a summer's drive can be found more pleasant, and the forest trees on either side are beautiful at all seasons of the year. The splendid shades of autumn are contrasted by the tender greens of spring, and the intermingled evergreen of winter. In these woods too dwell the most fairy forms of flowers, *Linnæa* with its twin blossoms hung upon one stem, *Cornus* with snowy inflorescence and other beauties of the circling year. In these shaded retreats **OAKES** loved to ramble, in quest of rare flowers or rarer insects. We remember a day spent with him, sweeping with his net the flowering shrubs for gauzy winged *Sphinges* and other kindred flies. October's mellow tints were all that now were left, and the witch hazel threw its golden blazoned bannered branches to the autumnal breeze, to relieve the pervading tone of color of the falling foliage.

The head quarters for the day were in the basement story of the North Church, which was generously tendered for the occasion. Several ladies of Essex were very busy in preparing comforts for their guests, and, while these operations were progressing, many of the party strolled away to various places of interest. At one o'clock, P. M., and after dispatching the sundry viands, the meeting was called to order in the meeting-house, by John L. Russell taking the Chair.

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By an unforeseen coincidence, the Field Meeting and its afternoon session occurred on the anniversary of the building of the church, a fact that excited some remark. Many of the citizens of Essex were present. The company was welcomed to the town by HON. DAVID CHOATE, of Essex. He remarked that a stranger visiting a place would see more sights of interest than the native of that place. Certain deviations by the magnetic needle in the course of four or five rods, to a very considerable degree, seemed to him to indicate some bed of magnetic iron ore which had not been found as yet, but which might be conjecturally considered as among indications of metals in the town, and beds of metallic paint were well known to exist, the same being some oxyde of iron probably. There were other points of interest, which a survey of the town might bring to light, and which might repay the search. At any future time, he would be most happy to act as a guide to any one in quest of the productions of Essex, and trusted that its fields and woods, its rock and hills might be explored. Mr. Choate was followed by the Reverend JOHN PRINCE, of Essex. He renewed the welcome to the Institute and trusted that its visits to day would not be barren of incident or interest. Mr. P. confined his remarks, however, to the historical incidents of the town, alluding only to certain scenery to be found contiguous, of a peculiar character, in the way of natural phenomena.

The chair expressed the thanks of the company for the cordial welcome. He alluded to the fact, that Essex woods constituted some of the most attractive grounds for the naturalist and especially to the lover of fine and rare flowers. He regretted the absence of some, who usually graced our meetings with their presence, and called for the reading of the records of the preceding meeting, which was accordingly done by the Secretary, after which, donations were announced as follows :

*To the Library*—from Charles W. Upham; G. F. Che-

ver; Boston Society of Natural History; Connecticut Historical Society; Ira Cheever of Chelsea; Thos. F. Odell; Peter Bourse of Montevideo, S. A.; George Leeds; James M. Hoppin; Mrs. Eliza B. Plum; Chicago Historical Society; Samuel A. Green of Boston.

*To the Cabinets*—from Benjamin Grover; Samuel L. Young of Marblehead; Charles F. Pool; William J. Cheever; George A. Ward of New York; George F. Chever; Thomas Trask; Jason Wilkins; Dr. D. F. Weinland of Cambridge; William Tufts; N. Kinsman; H. W. Putnam; Henry F. Shepard; Asa Hayford; Peter Bourse of Montevideo, S. A.; S. Carlin; John S. Ives; Morris Gouginham of Cambridge.

Mr. Samuel P. Fowler had rambled through the woods to day in search of plants and shrubs found here and no where else. Of this description is the *Magnolia glauca*, observed no where else north of us. The liquid amber or sweet gum (*Liquidambar styraciflua*, Michaux,) "is first seen on the seashore, towards the northeast, between Portsmouth and Boston" according to the author of the *North American Sylva*, but had been sought for in vain. Surely there were no other woods so favorable for its natural growth than the woods of Essex. Failing to find it, would seem to indicate an error in locating its habitat hereabouts, and so far northward. The witch hazel was alluded to, and a variety of the mountain ash, which occurred to day, and which he thought was more beautiful than the usual form of the gardens. Certain singular habits of birds engaged his attention and his views respecting them were advanced and discussed.

The magic power of the hazel rod was brought upon the carpet by several believers in its efficacy; and some so called experiments were instituted, unconvincing to any one who initiated or interested. Certain alledged facts were likewise adduced, which seemed to defy any explanation of a philo-

sophical character. In lieu of other subjects a discussion irregular in its mode was allowed.

Some allusions being made in the course of the meeting to the appearance of lichens on the stones in the adjoining graveyard, the Chair occupied some time in explaining their origin, mode of increase and uses in the vegetable kingdom. He also observed that these little and obscure plants had certain geographical limits and a fixed distribution, seemingly dependent upon climatic conditions; that there were species which affected maritime exposures, and were not found inland, of which the most common yellow foliaceous species, the *Physcia parietina* was an instance. Next to this, the *Physcia chrysophthalma* was of rare occurrence as it was traced inland, and though extremely common in this vicinity for instance, yet he had searched for it in vain at no greater distance than about Lowell in Middlesex county. Again, the *Placodium murorum*, a cosmopolitan species, abounded on our maritime rocks and seemed best suited to mark the line of growth between the terrestrial and ocean vegetation; while *Placodium elegans* also growing in the closest proximity, re-appeared further inland and occurred upon the rocks exposed to the winds and waves, which were commingled upon the shores of the lakes. Certain species too affected certain wrought stones almost exclusively, and the marble slab and the sandstone monument in the graveyard each, had its particular lichen growth. These were singularities not wholly explicable upon any known theory. All these obscure plants subserve particular functions in nature; and none can be regarded as useless in its economy. A similar law of distribution affects elevations above the sea-level, and mountain altitudes agree often in its lichens with distinct parallels of latitude, those of the high northern regions of the globe being found in alpine heights of our New-England mountain chains.



Before the adjournment of the session it was unanimously

*Voted*, That the thanks of the Essex Institute be presented to the Proprietors of the North Church in Essex, for the use of their vestry to hold this meeting; also, to the Hon. David Choate and to other citizens of Essex for their kind attention and hospitality towards the members and their friends during their excursion to this pleasant town.

The several vehicles and stage coaches being in readiness at the door, the party was conveyed to the depot at Manchester station and the cars resumed for return to Salem, and thus ended the last Field Meeting of the season, amid the flaunting and crimsoned autumnal leaves bidding us their periodical adieus.

*Thursday, December 9, 1858.*

**EVENING MEETING.** The first evening meeting of the present season, was held at the Herbarium Room, commencing at half past seven o'clock, the Vice President Russell presiding.

The Records of the last evening meeting which occurred on April 22, 1858 were read.

The donations were announced as follows, *viz* :

*To the Library*—from Samuel A. Greene of Boston; Montreal Society of Natural History; William Stimpson of Washington, D. C.; Lowell City School Library; F. W. Putnam; John L. Sibley of Cambridge; Joseph Willard of Boston; Canadian Institute at Toronto; Richard Edwards of Saint Louis, Mo.; John F. Webb; Boston Society of Natural History.

*To the Cabinets*—from U. S. Spofford of Essex; Mr. Norris of Chicago, Ill.; Abraham F. Bosson; E. R. Beadle of Hartford, Conn.; Samuel Hultman; N. Weston, Jr.; Henry L. Williams; Henry Ingersoll Bowditch of Boston; James McMurphy; Amos Trask; Charles K. Stevens of Lawrence; N. Vickery of Lynn; Charles H. Norris; Thomas Trask; Henry M. Brooks; William F. Nichols; Charles A Putnam; Miss A. M. Lowe.

These contributors to the Library and Cabinets had made their several donations since the eight of October.

Several letters lately received by the Secretary were duly noticed, among which were from Dr. Simeon Shurtleff of Westfield and Mr. Charles K. Stevens of Lawrence, respecting exchanges of specimens.

Dr. Richard H. Wheatland mentioned that the Institute had recently received a valuable and interesting collection of European Fishes and Reptiles from F. W. Putnam, comprising some sixty species. They were collected in Central Europe, the principal portion however in Germany, several of the Fishes, he said, were taken from the River Neckar, and were particularly interesting, on this account, as coming from one of the localities where *Linnaeus* was accustomed to collect and conduct his researches.

He also mentioned, having found during the past few weeks, in the vicinity of the almshouse in South Danvers, several specimens of a little fish supposed to be as yet undescribed and which belongs to Agassiz's family of Etheostomoids. They are small fishes very active in their habits, and living near the bottom of the pond; no other specimen of this family having been observed in this part of the state.

He also stated that, during the excursion of the Institute to Marblehead in September last, he found some specimens of minnows (*Fundulus sp.*) which differed materially from those usually observed.

The specimen of the tunny fish, horse mackerel, albacore, &c., of the fishermen (*Thynnus*) captured last summer and presented to the Institute, had not yet been identified with any of the described species, but may be found on examination to be the young of *Thynnus secundodorsalis*. A great many specimens of the same fish are found essential in determining species. To obtain these facilities we must rely on the kindness of those under whose notice they may casually come. Dr. Wheatland appealed therefore to the members to send in all sorts of specimens of every sort of fish. He remarked that species which appear to be most common, will often be found to vary essentially from those described in works upon the subject. In the collections of the Institute were two specimens of the common pickerel, which differ so much from each other that they might easily be considered as distinct species. But it is difficult to determine always, whether such differences are merely those of sex or of age, or such as would be allowed to constitute a distinct species. To determine such a point with accuracy, it would be necessary to have many specimens. At this juncture, the subject was continued in a colloquial manner, Messrs. John M. Ives, Dr. R. H. Wheatland and John L. Russell participating. The importance of possessing a great many specimens in *any* branch of Natural History, before we could arrive at definite results, was urged by the Chair and confirmatory of Dr. Wheatland's suggestions.

The subjects of Natural History which had occupied the evening, had been listened to by David Roberts, Esq., who directed the attention of the members to some articles of antiquity which had been presented to the Historical Department. At his suggestion, too, a Committee consisting of D. Roberts, Esq., Ira J. Patch, George D. Phippen, Geo. R. Curwen and John H. Stone, was appointed by the Chair to investigate certain subjects of our own local history, and to furnish treatises upon them. Mr. Jacob Batchelder also

urged the importance of so doing, and thus of obtaining plain substantial facts unwarpd by the pre-conceived notions of the historian, which might be the basis of a future work, by some body who should succeed. The relative value and reliance to be placed upon the newspapers and periodicals detailing alleged facts, were made a subject for his comments.

The Institute adjourned after having voted to continue these meetings every second and fourth Thursday evening during the season.

*Thursday, December 23, 1858.*

Evening meeting. The second evening meeting was held at the rooms at seven and a half o'clock, the Rev. John L. Russell, Chairman.

The records of the last meeting having been read, the donations were announced, as follows :

*To the Library*—from the American Antiquarian Society ; Miss Sarah W. Lander ; Francis Peabody ; George F. Read ; S. A. Greene of Boston ; Massachusetts Legislature ; Joseph Farnum ; Henry M. Brooks ; Jonathan Tucker ; F. H. Lee.

*To the Cabinets*—from Richard S. Rogers ; Henry M. Brooks ; Samuel Tufts of Lynn.

Letters were also noticed from Messrs. J. H. Hickcox of Albany, N. Y. ; Simeon Shurtleff of Westfield ; J. L. Waters of Chicago, Ill.

Some questions having been raised at the last meeting, respecting the spawning of the eel (*Anguilla*), and whether

oviparous or viviparous, the querist inclining to the latter, and a common belief among fishermen, the Chairman endeavored to show how the analogy between the higher and lower plants, might elucidate the mode by which the eggs of fishes could be produced in the appropriate membrane and yet escape the ordinary observation. By this illustration, he showed how intimate was the connection between different branches of Natural History, and how a general plan seemed clearly to pervade every part of organic life.

The anniversary of the landing of the Pilgrims at Plymouth occurring yesterday, David Roberts, Esq., occupied the rest of the evening in some remarks respecting the early history of the Pilgrim Church. This paper will appear in some future number of the Historical Collections of the Institute, perhaps in a modified form.

Some brief but pleasant conversation on the commencement of the Institute in its parentage through the ESSEX COUNTY NATURAL HISTORY SOCIETY, whose twenty-fifth anniversary occurs about this time, and some allusions to names cherished and respected, both here and abroad, connected with it, concluded the evening's meeting.

*Thursday, January 13, 1859.*

Evening meeting. The third evening meeting of the season was held at the rooms of the Institute, Vice President John L. Russell, in the chair.

Records of the preceding meeting were read, and the donations announced from the following persons, viz :

*To the Library*—from Edward Pousland ; Smithsonian Institute ; Directors of the Public Library at Newburyport ; John H. Hickcox of Albany, N. Y. ; Trustees of the New  
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York State Library ; Francis Peabody ; Lee, Higginson & Co., of Boston ; Canadian Institute at Toronto ; Mrs. N. D. Cole ; Secretary of the Massachusetts Board of Education ; Charles W. Upham ; American Academy of Arts and Sciences ; Richard H. Wheatland ; James A. Chamberlain.

*To the Cabinets*—from Samuel Tufts, jr., of Lynn ; James M. Barnard of Boston ; James Ward ; Charles H. Norris ; Amos Trask ; Enoch Fuller ; Francis Peabody ; George F. Chever ; Zoological Museum at Cambridge (by exchange).

The chair announced that Mr. James Marsh of Danvers, had presented to the Herbarium a peice of the "Big Tree" of Calaveras county in California. The tree from which the specimen was taken was according to Mr. Marsh's measurement 24 feet 9 inches in diameter exclusive of the bark, (which if added would make 3 feet more) at six feet from the ground. The age by actual count of the yearly rings was 1555 years. A cone or seed-vessel from one of the same kind of trees was also given at the same time. This statement is taken from a note accompanying the donation, in Mr. Marsh's hand writing. In Silliman's *Journal* &c. 2d Series, for 1854, may be found an account of a paper read by Professor Asa Gray of Cambridge, Mass., in which some remarkable facts are stated respecting the size and age of the trees similar to the one under consideration. Professor G. mentions a section of a trunk of a gigantic tree felled near the head of Stanislaus river, on the Sierra Nevada, California, which was on exhibition at Philadelphia. "The size of this tree was such as to give it a presumptive claim to rank among the oldest of the present inhabitants of the earth, its length being 322 feet, its diameter at five feet from the ground 29 feet 2 inches." These measurements were published in England by a Mr. Lobb. The layers of the wood were only estimated but not counted. Sections of the wood of the outside of the Philadelphia specimen gave 48 layers

to the inch, by measurement Mr Marsh's specimen gives 15 layers to the inch. The name of the monstrous production is, according to Prof. G., *Taxodium sempervirens*. This difference, if the species are identical in both specimens, must be accounted for by a more rapid growth. Mr. Marsh has raised some seedlings from seeds brought home by him.

An interesting communication from JOHN M. IVES was read by that gentleman. It related to the cultivation of the apple and the pear. The pear tree he remarked had the reputation of being longer lived and more durable than the apple tree. Notwithstanding this, most of the newly introduced and highly prized varieties show symptoms of decay while the older sorts scattered over New England are still in bearing condition and full of vigor and health. The causes of decay in so valuable a tree are worthy of investigation the more so as a period of from 50 to 100 years is allowed for its existence.

The *tap root* as it is termed probably has something to do with the long life of the tree. As far as we can know, such roots still remain attached to the roots of all long lived specimens of the pear tree. Perhaps the usual root-pruning may after all be injurious: as it is invariably the custom among nurserymen to cut off such roots on transplanting in order to produce more lateral ones and such as will spread themselves just under the soil, where the most fertility is supposed to be. This kind of pruning may interfere with the natural action of the growth and by producing a forced growth and a sort of plethora it may tend to produce decay, although the bearing of fruit may be hastened thereby. Mr. Ives also suggested whether VAN MONS' method of producing new varieties by enfeebling or subduing the original coarse luxuriance of the tree and sowing seeds from fruits not mature, with the close planting of his seedling trees, might not operate towards this decay. DU HAMEL of France, he observed, could not produce a single fine variety from seeds

of the finest table pears: while Van Mons produced more than a score of them. Mr. Ives had noticed some unusually healthy trees on the farm of General Josiah Newhall of Lynnfield. They were seedlings unpruned either on the roots or side branches: some of them had last spring began to flower, they were about 16 years old. Similar process of allowing the side branches to grow had been practiced in Illinois with complete success, no instance of the pear blight appearing among the trees of the person, who followed it, while his neighbors' trees, which had been pruned when young were much affected. The dry canker seen on the trunks of trees especially on the sides exposed to the sun arose from a want of shelter and shade such as suckers and side branches afforded. Mr. I. had found that the pear tree generally requires a retentive soil, in order to render profitable crops; swampy or wet land where water stands under the surface or remains in the subsoil, is an unsuitable location; and perhaps in such spots the tap root pruning might be serviceable, and the roots of any fruit tree which find their way into such stagnant and wet places will decay and communicate a corresponding decay of the branches, commencing in the top of the tree.

Yet no fruit tree varies so much in regard to soil as the Pear. It may be said that each variety of pear has its own soil. The "Bartlett" will grow in almost any soil and produce abundant crops in any kind of good soil; but a strong, deep soil is requisite for successful fruit bearing of the Beurre d'Arenberg, Diel, Wilkinson, Lewis and some others. Some kinds bear best when the trees are young, as for instance the Flemish Beauty; others do best when grafted upon old trees; such are the Seckel, the Winter Nelis and the Lawrence.

Mr. I. did not recommend working fine varieties of pears upon quince roots, as the dwarfing of the trees is unfavorable to long life or abundant crops. Some kinds however do best so, as the sort known as Dutchesse d'Angouleme shows.



He considered it advisable always to study the peculiarities of varieties in regard to their bearing properties in order to avoid confusion and error in the estimation of kinds. He instanced the "Napoleon" where in warm, sandy loam, it was poor and astringent, but in strong and retentive clayey loam, it was very fine. The first mentioned soil is also well suited to the Belle Lucratif for an autumnal pear, and to the Bloodgood as a summer pear. This accounts too for pears which were excellent on the very spot where they sprung up as seedlings, becoming worthless when transplanted a short distance, it may be, from it. The locality of planting particular varieties should be regarded. Some will not flourish in the open country, and require sheltered gardens, such are the Easter Beurre, Marie Louise, Long Green and Gansels Bergamotte. Mr. Ives recommended the hardy fall and winter pears for farm cultivation, such indeed as were termed cooking pears. In St. Peter's street in this city is a large pear tree at least 40 years old, which annually bears good sound fruit. It is the Rushmore's Bon Chretien. In 1847 the owner took 3 1-2 bushels of pears from the tree for his own use and sold the balance for \$26.50. The following may be especially recommended, the Pound or Uvesdale's Saint Germaine, Black Pear of Worcester, Spanish Bon Chretien, Catillac, Chelmsford and Vicar of Winkfield. It was the opinion of the late Robert Manning, the distinguished cultivator of fruit trees, that "the extensive cultivation of these sorts in large orchards would produce greater and surer income for the capital employed than any other investment." The Black Pear of Worcester is thus extensively cultivated in many towns of Plymouth county with success.

Mr. I. considered that the best pears for our cultivation were those which originated with us or else those kinds which were originated in the temperate and colder latitudes of Europe. Our Massachusetts farmers should prefer our own fine American seedlings.

First and second rate pears, is only a relative term, those which can be properly ranked as first rate abroad will be found inferior here it may be and *vice versa*. In England the Bartlett is second rate; here it is a first rate; the Beurre d'Arenberg is only second rate here, but there it is a first rate winter fruit. With us the Winter Nelis and Lawrence are much preferable.

The subject of what is called the pear blight is worthy a passing remark. This disease, said Mr. Ives, was quite prevalent around Boston some years since, and it was then attributed to the work of an insect called by Prof. Peck *Scolytus pyri*. Much controversy however arose on this point, as can be found in the journals and newspapers of that time, and a great many cultivators were sceptical regarding the theory. Mr. I. had come to the conclusion that it could not be the work of any insect solely, but that more likely, high dressing with uncomposted manures of animal origin must be the cause of much of this evil. It seemed much more creditable that vegetable composts were to be preferred, and the experience of some of the most successful cultivators, whose old pear trees were in unploughed land and which had only annual dressings of wood ashes corroborated this opinion. Mr. I. also had a few words to say about the ringing of the bearing branches of the grape vine, having practiced it for several years upon the Isabella grape with marked success. By this process he had been able to ripen bunches which would weigh nearly a pound each. He thought it a good plan to take down the limbs and shoots from the wall on approach of winter and lay them upon or just under the ground, covering them with earth or mats, contending that it was the warmth of the sun's rays and not cold which so often killed the vine in winter; especially affecting the last year's wood.

At the conclusion of the essay by Mr. Ives, of which we have given the substance, a discussion arose respecting the

cultivation of the apple called the Northern Spy, by David Roberts, Esq., Samuel P. Fowler, Mr. Ives and the chair, which elicited much information. The chair thought such essays as those we had listened to exceedingly well adapted for the evening sessions and appropriate as coming from the Horticultural Department of the Institute. He believed that a widely diffused and increasing taste for gardening had been fostered by the attempts of the Society to promote it, in its annual and other Exhibitions, and that the long cherished wish of the distinguished MANNING often expressed to him in private conversation was about to be realized, "that the young men of Salem should learn to cultivate fruit trees, and make such cultivation a matter of scientific study."

The following paper was read by S. P. Fowler, Esq. :—

ORNITHOLOGY OF THE UNITED STATES, ITS PAST AND PRESENT HISTORY. Ornithology has had in every age and country, many enthusiastic admirers. But in New England, during a period of more than one hundred years from its settlement, very little notice was taken of our birds. Indeed there was but a small amount of correct knowledge upon the subject of American Ornithology, previous to the appearance of the great work of Alexander Wilson. There were a few birds, that early attracted the notice of the first settlers of the country, and there were others, to which their attention had been called by the Indians, those close observers of nature. Most of the knowledge of our Natural History, previous to the nineteenth century, is to be found in scattered portions of the civil history of America, written chiefly by travelers and journalists, who possessed very little taste for the study of the natural sciences. Capt. John Smith, who visited New-England in 1616, has furnished us the following list of birds, viz: "Eagles, Grips, divers sort of Hawks, Cranes, Geese, Brants, Cormorants, Gulls, Turkeys, Dive Dippers, Sparrow-Hawks, Goshawks, Falcons, Ospreys, Blackbirds with red shoulders, Herons, Dotterells, Oxeyes, Parrots, Pigeons, Thrushes, Wrens, and divers sorts of small birds, some red and some blue." Thomas Morton in his "New-English Canaan" published in 1632, when speaking of the abundance of our water birds at that early period, says: "there are

geese of three sorts, viz : Brant-geese, which are pied, and White-geese, which are bigger than the tame geese of England, with black legs, black bills, and head and neck black. There is of them a great abundance ; I have had often a thousand of them before the mouth of my gun." William Wood in his "New England's Prospect," published in 1634, says, the "Ducks of the country be very large ones, and in great abundance. So there is of Teal likewise, and if I should tell you some have killed a hundred geese in a week, fifty ducks at a shot, forty teal at another, it may be counted almost impossible, though nothing is more certain." There is but little doubt, that our Puritan ancestors subsisted to a considerable degree, upon the water fowls they shot in Plymouth and Massachusetts bays during the first winter they landed on our shores. All the early historians notice three distinct species of the goose, and their being very abundant—These are the Brant, Wild or Canada Goose and the White Goose. The latter now known as the Snow Goose (*Anser-hyperboreas* of Audubon) has become very rare on our coast. It is an interesting, beautiful, and distinct species, and it is now many years since I have seen a specimen John Josselyn published in 1672 his "New England's Rarities" and his two voyages to New England and there described the animal and vegetable productions of the country—It is a queer book indeed, about the size of a New England Primer, with rude cuts—It was noticed more than one hundred years ago, with a good deal of distrust by Peter Collinson of London, in a letter to John Bartram, under date of February, 1757—Friend Peter says, "I wish my good friend John Bartram would peruse a little tract called "New Englands Rarities" by John Josselyn Gentleman, and see his account of the White Mountains, which is very extraordinary. If it was peaceable times, who knows but thee John might be tempted to make them a visit? What was his Phil-han-now, a monstrous great bird? Josselyn must have a fine palate, and a good digestion, to say a Turkey Buzzard was good meat. His Porcupine shooting his quills, is a vulgar error. Pray see his account of the Moose Deer. I don't know how to distinguish between his Raccoon, and his Jackal—are they all one? I presume he must have mistook a Panther for a Lion, especially for a she Lion But Lions are never found in such cold climates. Does he not exaggerate in his article of frogs a foot high; and that some of them are

seen as large as a child of a year old? His Rattle-snake's vapour, shows himself to be a vapourer. He seems enamoured with the young Indian nymphs. What sayest thee to these originals, in their native dress? Have they ever been able to charm an Englishman, as they do the French, who are not so delicate? As thee lovest curiosities and novelties—I herewith send thee the book, which will let thee see the notions of a virtuoso, about one hundred years ago." The French travelers and Jesuits, who visited this country in the early period of its settlement, have given us in a few short chapters an account of its natural history. Many of the animals peculiar to America, when first noticed by the Jesuit fathers, were regarded with astonishment or alarm. Such, as the Bison, Panther, Oppossum, Skunk, Beaver, Whipporwill, Hummingbird and Rattlesnake. There is an amusing account of the first discovery of the skunk, by the fathers Du Poisson & Charlevoix. In a voyage up the Mississippi, performed in 1727, Du Poisson says: "on the 9th of June, we had scarcely embarked, when there came from the woods a most execrable odor. They told us that it proceeded from an animal called *bete puant*." Charlevoix says: "there is a kind of pole cat which goes by the name of *Enfant du Diable*, or child of the Devil; a title derived from his ill scent, because his urine, which he lets go, when he finds himself pursued, infects the air for a league around; this is in other respects a very beautiful creature."

The baron Lahontan, Du Pratz, fathers Hennepin and Charlevoix, and some other authors of the same class, are sometimes consulted by modern ornithologists, although they abound in error and are wholly destitute of scientific descriptions, which makes it frequently difficult for one to understand to what bird they allude. Mark Catesby in 1732, published the first volume of his "Natural History of Carolina, Florida, and the Bahamas;" the second volume appearing in 1743. The work was in large folio, and for that day was considered a magnificent production. He was the author of a paper printed in the 44th volume of the Philosophical Transactions "on birds of passage" in which he attempted to prove, that the cause of the migration of birds, was their desire to search for their food. This is a great mistake, no doubt. Mr. Catesby appears to have been greatly perplexed in regard to the change of plumage in the

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Ricebird or Bobolink. He examined great numbers of them by dissection in autumn, and declared all of them to be females! He likewise expressed an opinion, that this bird was not to be found in the country, previous to the cultivation of rice in the United States; and in this belief he was also mistaken. Dr. Gordon found great fault with Catesby, whose whole work, he says, but especially the second volume, is so incomplete, and abounds with such gross errors, that it would be no small task to amend and complete it; and that he never consulted it without indignation and disgust, at seeing the most beautiful works of creation so miserably defaced and mutilated, and so illy represented.

In the year 1748, Peter Kalm, a Swedish naturalist, and pupil of Linnæus, visited this country, and spent three years in examining its natural productions. He was a vigilant observer, and an industrious collector of plants, and gave considerable attention to the study of our birds, and in 1753 published his travels in North America, in two volumes; wherein he has given us a figure of the Mocking-bird, Red-breasted Thrush or Robin, Purple Jackdaw or Crow Blackbird, Red winged Stare or Blackbird, American Migratory Pigeon, Ground Squirrel, Flying Squirrel, Raccoon, and American Pole Cat or Skunk. Kalm still retains to this day, considerable reputation as a naturalist, and his name has become enduringly associated with a genus of our most elegant evergreen shrubs.

Capt. Jonathan Carver, an enterprising traveller in the interior of North America in 1766, published a *Journal* of his travels, wherein he describes the Beasts, Birds, Fishes, Reptiles, and Insects, which are found in that country. He noticed and described the following birds, viz: the Eagle, Night Hawk, Whippoorwill, Fish-Hawk, Owl, Crane, Ducks, Teal, Loon, Wood-Pigeon, Woodpecker, Blue-Jay Wacon bird, Blackbird, Whet-saw, King-bird, Hawk, Crow-Raven, Parrot, Pelican, Stork, Cormorant, Heron, Swan, Water-Hen, Heath-Cock, Partridge, Quail, Snipe, Lark, Cuckoo, Swallow, Thrush, Robin, Wren, and Humming-bird. Carver describes one bird in his list, which has never as yet been identified, if indeed it ever existed, but in the imagination of the Indian. The Wacon-bird he says, as it is termed by the Indians, "appears to be the same species as the bird of

paradise. The name they have given it, is expressive of its superior excellence, and the veneration they have for it; the wakon bird being in their language, the bird of the Great Spirit. It is nearly the size of the swallow, of a brown color, shaded about the neck with a bright green; the wings are of a darker brown than the body; its tail is composed of four or five feathers, which are three times as long as its body, and which are beautifully shaded with green and purple. It carries this fine length of plumage in the same manner as a peacock, but it is not known whether it raises it into the erect position, that birds sometimes does." "I never saw," continues Carver, "any of these birds in the Colonies, but the Naw-dowessie Indians caught several of them, when I was in their country, and seemed to treat them as if they were of a superior rank to any other of the feathered race."

George Henry Loskiel, a Moravian missionary, when relating the history of his mission among the Indians of North America in 1788, gives us a catalogue of the birds he noticed, and describes the Wakon-bird as follows: "There is a bird in these parts, called by the Indians, the bird of the Great Spirit, and is probably a species of the bird of paradise. It has a beautiful shape, and is as large as the swallow. Its neck is of a light green, and four or five feathers, three times the length of its body, variagated with gold and purple extends from its tail." It is difficult to determine what these birds were, seen by Carver and Loskiel in the Indian countries. I have thought they might have been either the Fork-tailed Flycatcher, or the Swallow-tailed Flycatcher, or in the absence of a more definite description, we may class the Wakon bird with Professor Rafinesque's *Red-headed Swallow*, that no ornithologist has ever been able to discover.

The Whet-Saw, a bird described by Carver, has been the occasion of several amusing mistakes by ornithologists. The bird during the day, being hid in the most gloomy swamps, and uttering unseen its singular note, has given rise to many conjectures in regard to it. Audubon, I think, was the first ornithologist, who identified it with the little Acadian Owl. Carver's notice of the bird is as follows: "The Whet-Saw is of the Cuckoo kind, being like that, a solitary bird, and scarcely ever seen. In the summer

months it is heard in the groves, when it makes a noise like the filing of a saw, from which it receives its name." This account of the Whet-saw and Wakon bird have been deemed reliable and correct, by some persons for more than one hundred years. It was published in several editions of Dr. Morse's Geography, when it was used as a reading book in our common schools. In the sixth edition of the above work in two large volumes, a list of our birds filling eight pages was furnished by Rev. Dr. Cutler of Hamilton. In Catesby's list we find 95 species. In Jefferson's 124. In Belknap's 121, and in Bartram's 215. In the 2d edition of Guthrie's Geography, published in 1815, Mr. George Ord furnished for the work, a list of the systematic names of North American animals, as far as known, followed by short notices of the more interesting species. His list of birds and descriptions compose 100 species. We have now come down to that period when the father of American ornithology, Alexander Wilson, landed upon our shores at Newcastle, a poor wanderer, directing his steps to Philadelphia on foot, distant about thirty-three miles, with his gun upon his shoulder. The first bird, that he saw, was a Red-headed Woodpecker, which he shot, and considered it the most beautiful bird he had ever beheld. The 1st volume of Wilson's great work appeared in Sept. 1808, the 7th and last volume in 1813. He was busily engaged in completing his 8th volume, when he was overtaken by disease, the dysentery, and after a sickness of ten days, he died on the 23d of August in the 47th year of his age. In October 1808, Wilson visited Salem and was the guest of the Rev. Dr. Prince. He says, "Salem is a neat little town. The wharves were crowded with vessels. One wharf here is twenty hundred and twenty-two feet long. I staid here two days, and set off for Newburyport, through a rocky, uncultivated, sterile country."

As the American Ornithology of Wilson was incomplete at his death, Charles Lucien Buonaparte published a continuation of the work, containing figures and descriptions of all birds discovered since his time. John J. Audubon followed Wilson in the study of our Ornithology, and commenced publishing his splendid work on the Birds of America, in 1835, and finished it in 1839 in five volumes. His plates are larger and more beautifully colored than those of any American Ornithologist, but his descriptions and observations



on the habits of birds, lack the poetic beauty of Wilson. Audubon has been most severely handled by the eccentric Charles Waterton of England, where in his account of the Humming Birds he says, they are able to fly, in one week after they are hatched. Also in the wonderful description of what he saw of a Pigeon-roost, on the banks of the Green River in Kentucky, such as the clustering together of these birds on the branches of trees like bees, as large as hogsheds; the breaking of trees two feet through at their butts, by the weight of pigeons on the tops. In 1832, Thomas Nuttall published his "Manual of the Ornithology of the United States and Canada," in 2 vols., with many wood-cuts. The first volume contains the land birds, with an introduction of thirty pages, presenting the general subject of ornithology, with great beauty and interest. The second volume gives us the water birds, with an appendix, drawn from discoveries made by Richardson and Swainson. In his preface, he says, "it was my principal object to furnish a compendious and scientific treatise on the birds of the United States, at a price so reasonable as to permit it to find a place in the hands of general readers. It is known to many persons how well and truly he accomplished his purpose. We are sorry to add in connection with this work, that for several years it has been out of print, and has become very scarce. A report on the Ornithology of Massachusetts by order of the Legislature, was presented to that body in 1839. It proved to be a poor diluted compilation from the labors of Wilson and Audubon, and wholly devoid of any scientific descriptions of our birds, and any one would be puzzled to learn from any thing to be found in the book, the difference between a Cat-bird and Blue-jay.

Dr. DeKay's Zoology of New York was published in 1842. It is an extensive work, with good scientific descriptions. But I think the figures and coloring are poor, probably they were drawn and colored from bad stuffed and faded museum specimens. A valuable local history of the birds to be seen on Long-Island, was published in 1844, by J. P. Giraud, Jr. It is particularly full and satisfactory, in its descriptions of the water birds visiting that district. In 1856 there appeared the history of the birds of California; Texas, Oregon, British and Russian America, not given by former American authors, by John Cassin, in one large volume, with colored plates. By this work we have fifty new species

added to our former lists. In Dr. Richardson's Northern Zoology, (part second, Birds,) is to be found much valuable information, respecting our Ornithology. Audubon's synopsis of birds of America, embraces 491 species. The number of birds described by Wilson is 292. To this list, Buonaparte added in his continuation 45 species, making the whole number to be found in the American Ornithology 837. Mr. F. W. Putnam has furnished a list of birds for the County of Essex, embracing 245 species. The whole number of different birds to be found in the Commonwealth are supposed to be 293. Before closing this part of my subject I would add, that a considerable amount of information respecting the birds of the United States is to be found in the works of English ornithologists, particularly in Pennant's Arctic Zoology, and Dr. Latham's Synopsis. It is greatly to be regretted, that we have not at this time, a cheap and complete work, with specific descriptions of all our birds, as it would very much facilitate the study of ornithology, and increase the number of those, who would like to learn more of their history, and although many valuable and beautiful books have appeared upon the science of ornithology, still it would be difficult to direct an enquirer where he could obtain a work, describing our feathered tribes at a moderate price. The voluminous Reports of the United States and Mexican Boundary, and the Explorations for a Rail Road Route to the Pacific ocean has furnished us with many new species of birds. The whole number of birds to be found in the United States and Territories as enumerated in the 9th vol. of the Rail Road Reports are 788.

On conclusion of Mr. Fowler's papers, Dr. R. H. Wheatland mentioned that a specimen of (*Salmo eryox*) taken in the Merrimack River, had been presented to Prof. Agassiz. This, though an occasional visitor adds a new species to the fishes found within the limits of this county. It has hitherto been supposed to be confined to Europe and may be considered as an arctic species coming down accidentally on the American instead of the European coast.

He also stated that during his rambles the past autumn he had noticed another species of Bream (*Pomotis obesus* Gerard) in considerable abundance ; a new species of

Pomotis at Lynnfield woods; and a species of stickleback which may be the (*Gasterosteus occidentalis*) of Cuvier or a new species. The differences in the two species of Pickerel found in the county were pointed out, supposed to be the young and the adult of the same. He repeated his request that persons, in the way of obtaining specimens of our common fishes, would contribute the same to the Institute so that the collection of the county fishes may be as complete as profitable.

The Secretary, Dr. Henry Wheatland, mentioned that as the Rev. John L. Russell was about to commence his course of lectures on Botany to a class occupying the rooms of the Essex Institute, it might seem appropriate to refer to a similar course given in Salem, in May 1816 by Dr. Andrew Nichols at that time member of the New England Linnean Society, and subsequently, on the formation of the Essex County Natural History Society, its first President. A well preserved and perfect copy of a hand bill was then shown, which had been presented to the Library of the Essex Institute by Mr. Amos Trask, a collector of old and rare matters. The place for the lectures was "Concert Hall," the price of tickets for the course of 12 lectures was \$5.00 for a gentleman or lady; for a gentleman and lady or two of the same family \$8.00. These lectures were also duly announced by editorials and advertisements in the Salem Gazette of that year. Some accounts of the success of the lecturer and of the matter can be seen by consulting the issues of May 14; May 17; May 28; and June 4. Dr. Nichols' treatment of the course was into systematical and physiological botany; Mr. Russell proposes to exhibit the development of plants from the simple cell formation and cellular plants to the most highly elaborated, in other words, the development of the plant.

Mr. S. P. Fowler in a supplementary observation to his views on ornithology this evening, alluded to crows resorting

to the sea coasts in winter, which elicited some conversation ; and reference was made to the correctness of some of Audubon's statements in his descriptions of birds, which was treated in conversation by Messrs. R. H. Wheatland, S. P. Fowler and John L. Russell, after which the Institute adjourned.

*Thursday, January 27, 1859.*

Evening Meeting. At the meeting this evening commencing at 7 1-2 o'clock, in absence of the usual presiding officers, David Roberts Esq., was called to the chair. The records of the preceding evening meeting were read.

Donations since that meeting were thus announced.

*To the Library*—from Moses G. Farmer ; Henry L. Lambert ; George Andrews ; Ohio Mechanics Institute at Cincinnati ; Caleb Foote ; Montreal Society of Natural History ; Essex Agricultural Society ; Allen W. Dodge of Hamilton ; William Stimpson of Washington, D. C. ; Lucius M. Boltwood of Amherst ; M. A. Stickney ; Miss S. Nichols ; N. J. Lord.

*To the Cabinets*—from Joel Kimball ; Moses G. Farmer ; Mrs. Sarah Burnham of Ipswich ; Joseph True ; Caleb Cooke ; Joseph Cheever ; R. W. Ropes & Co. ; Charles Lawrence ; William Brown.

Letters were read from the Trustees of the Boston Public Library ; New Orleans Academy of Science ; and Charles B. Norton of New York, N. Y.

MOSES G. FARMER read an interesting and valuable paper, containing the results of his observations respecting the product of a field of corn at Boscawen N. H., as follows :

While husking corn, one day last October, at my brother's farm in the town of Boscawen, Merrimac County, N. H., the uniformity in the size of the ears, and their general sound-

ness, were noticed, there being scarcely one unsound ear in thirty, and the ears generally appeared to be rather long. Curiosity was excited to ascertain how long an ear could be found, and also to find the average length of a basket full of ears taken at random. The examination was continued to some length and the results are herewith given. I may say, that though it would appear upon looking at a heap of corn, as if many of the ears were twelve or fourteen inches in length, yet only six or seven ears of twelve inches in length were found in husking over one hundred bushels, and the largest ear, that I could learn anything reliably of in the neighborhood, was twelve and a half inches. Several instances were found where one stalk produced three or four sound ears. The land, on which this corn was raised, is rocky, the plough seldom running more than fifty feet without breaking the furrow, by reason of a stone sufficiently large to force the plough completely from the furrow.

The land is on the side of a hill declining to the south, with a meadow adjoining its outer edge. The soil is fertile and has produced good crops of hay for four or five years.

The cornfield embraced two acres, it was planted in rows three and one third feet apart, and with the hills at the same distance, so that the rows ran in two directions north and south, as well as east and west. The first load of corn husked, was taken from the middle of the field and comprised 8 rows of 64 hills each, amounting to 512 hills, and occupying .13047 acres, being at the rate of 3,924 hills per acre, the produce of this load was 10 2-3 baskets of ears or 16 bushels, at this rate there would be 122.633 bushels of ears per acre. I counted the ears in a basket and it contained 181 ears, the basket would hold 1 1-2 bushels, this would be at the rate of 120 2-3 ears per bushels; 100 of these ears taken at random showed 82 of them to be 8 rowed, 17 of them 10 rowed, and one of them 12 rowed; 100 rows, one from each ear measured in length 717 inches, and contained 3732 kernels: an average of 37.32 kernels to each row and about 7 1-6 inches for the average length of an ear. The number of kernels on an ear, average 312 7-10—on a bushel of ears 37,735, and 4,627,580 kernels would be the produce of an acre of ground.

Since an acre contains 43,560 square feet, or 6,272,640 square inches, a kernel of corn would require for its growth

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1.35 square inches of surface in this field. These were planted four kernels in each hill, which produced an average of 3.77 ears or 1179 kernels per hill—the yield then was 1179-4 equal to 294 75-100, or nearly three hundred fold. Having before observed that many stalks produced two fair full ears, had each stalk done so the yield ought to have been 625 48-100 fold. Might not the yield have been increased by planting the hills farther apart with fewer kernels in them? Had there been planted three kernels per hill—the hills being 3 1-2 feet apart each way,—had also each stalk produced two full ears, the whole yield would have been at the rate of 178 4-10 bushels of ears per acre.

Seven fair specimens of the eight rowed ears were shelled, giving 2384 kernels which exactly filled a tin measure of 68 cubic inches in capacity—result, 35 kernels occupy a square inch, and 75,582 kernels per bushel, and to shell this amount would require 2  $\frac{3}{4}$ -1000 bushels of ears; thus confirming the usual allowance of two bushels of ears to give one bushel of shelled corn.

Putting water into the measure containing the 2384 kernels—it was found that 65 parts were occupied by the corn and 35 by the water.

I next selected an 8 rowed variety called the “King Philip corn” the ears being large and having very large kernels, while the 8 rowed variety, spoken of before, was of moderate size. Two ears of the King Philip corn, selected at random, measured on the average 5  $\frac{3}{4}$  inches around the butt of the ear, 5 inches round the middle, and 4 inches around the tip, and they measured 18 inches each around the ear lengthwise, and the two ears together weighed one pound. There were 41 kernels per row, and the rows averaged in length 7.5 inches, the number of kernels on both ears 669; the two ears together displaced 26.3387 cubic inches of water, the 669 kernels displaced 18.0718 inches, the cobs displaced 9.6199 inches; hence the ratio of corn to cob was 1.877 that of ear to corn 1.457, that of ear to cob 2.738, and that of corn and cob to unshelled ear 1.051; here also we see the same result namely the shelled corn and cob occupying more space than the unshelled ear, it might possibly be due to the swelling of the

corn and cob after being wetted. The 669 kernels displacing 18.0718 cubic inches are equal to 37 kernels displacing one inch.

Other experiments were to determine whether the eight or twelve rowed variety, produced most corn in proportion to its cob; also the same with respect to the variety known as "King Philip" corn. Some of the above results are here grouped together into a table, that the relations which the several varieties sustain to each other may be readily observed.

Although these data are somewhat imperfect,—several other items need be known before an accurate result can be given; yet it is interesting to observe the bearing of the above facts.

	Common 8 Rowed.	Common 12 Rowed.	King Philip.
(1) Number of rows,	8	12	8
(2) No. of kernels in a row,	37.32	46.4	41
(3) No. of kernels required to dis- place one inch,	56 53.5	51.	37
(4) No. of kernels naturally packed in one inch,	35		
(5) Ratio of corn to cob,	2.281	2.035	1.877
(6) Ratio of ear to corn,	1.492	1.52	1.457
(7) Ratio of ear to cob,	3.4	3.1	2.738
(8) Ratio of corn and cob to ear,	1.037	1.023	1.051
(9) Percentage of matter in a bushel of shelled corn,	.6497	.6271	.6272
(10) Amount of water displaced by two ears,	18.6327	33.4237	26.3387
(11) Amount of water displaced by the corn from two ears,	12.4858	21.8983	18.0718
(12) Amount of water displaced by two cobs,	5.4707	10.757	9.6199
(13) Relative produce of one kernel,	4.	7.	6.
(14) Product of (5) x (7) ÷ (6),	5.87	4.15	5.1692
(15) Product of (5) x (7) x (9) ÷ (5),	3.8137	2.6025	3.2421

The expense per acre of cultivating the above-named corn-field was estimated as follows, viz: land valued at \$50.00 per acre, its interest one year would be \$3.00. The labor of ploughing to break up the soil was 3 pairs of oxen and 3 men for one day—if we reckon one pair of oxen worth as much per diem as one man, and each at \$1.00 per day,

the expense of breaking up the field would be \$6.00. Next reckon 30 loads of manure of 30 bushels each, valued at \$1.00 per load—\$30.00, add expense of delivery and spreading the same, 15 cents per load—\$4.50. The expense of harrowing in the manure was 1 pair of oxen, 1 man two-thirds of a day \$1.33. The expense of the second ploughing was (1 man and 1 pair oxen) one-half day—\$1.00. The second harrowing was, (1 man and 1 pair oxen) one-half day—\$1.00. The expense of planting, 6 1-2 quarts of corn, 20 cents and labor of one man 2 days \$2.20. Expense of passing the cultivator six times through the corn was (1 horse, 1 boy, 1 man,) one-half day—\$1.50. Expense of hoeing was (2 men 6 days) \$12.00, which foots up as follows:

Expenses of raising one acre of corn :

Interest on land,	-	-	\$3.00
Labor breaking up,	-	-	6.00
Cost of manure,	-	-	30.00
Cost of distributing manure,	-	-	4.50
“ of first harrowing,	-	-	1.33
“ of second ploughing,	-	-	1.00
“ of second harrowing,	-	-	1.00
“ 6 1-2 quarts corn and planting,			2.20
“ using cultivators,	-	-	1.50
“ of hoeing,	-	-	12.00
			<hr/>
			\$62.53

From this may be deducted half of the interest on the cost of the land, as it is improved in quality by cultivation—\$1.50. Also half the value of the manure—\$15.00; because the corn crop would not wholly exhaust it. Our account will then stand, \$62.53—16.50=46.03 as the expense of raising 61 31-61000 bushels of shelled corn; which, at one dollar per bushel, would leave a profit of \$61.31—46.03= \$15.28 per acre as the profits of raising corn on this rocky land.

Some discussion taking place on the subject of corn in which the chair, John M. Ives and M. G. Farmer participated. A vote of thanks was passed to Mr. F. for his valuable paper.



The following are notes from Mr. JOHN M. IVES' essay on the cultivation of fruit, the apple being under consideration this evening.

The apple is emphatically the farmer's fruit. Mr. Ives had occasion to make a statement in a Report to the Essex Agricultural Society, some ten years ago, that if we should pay more attention to those varieties of the apple, which are indigenous, or have been produced on our soils, that apples can be raised with more certainty of a crop than can pears. However strange it may appear, the best apples in our market have been those sorts, which were first produced in our region. The truthfulness of this statement received corroboration from what Henry Ward Beecher said in an article on the cultivation of the apple, that the best apples in the West were those varieties which originated in the great valley of the West. With us, the Hubbardston Nonesuch, Baldwin, Roxbury Russet, Mother, Porter, Williams' Favorite, Danvers Winter Sweet, are among the best fruits, all of them of Massachusetts origin. The Newton Pippin, Esopus Spitzenberg, Red Doctor, Pinnock's Red Winter and Red Gilliflower which are first rate in their native soils are, when grown upon our own soils, inferior to the Hubbardston Nonesuch, Minister, Baldwin, Mother, &c., &c. Such is the case too with most foreign varieties, though the Gravenstein of Germany, does equally well with many of our native sorts, and the English Ribstone Pippin does succeed occasionally in our deep and rich soils.

Much importance should be attached to the synonymy of fruits, because fruits and apples particularly, are known under so many local names. Thus the Lyscom is known in Worcester as Mathis' Stripe, as Osgood's Favorite in Salem, and as Nonpareil and Lady Cap in the North part of Essex County.

The following list represented some of the best kinds :

Early Summer Bow,	Summer Rose,
Fall Harvey,	Drap d'or,
Williams' Favorite.	

In strong, highly manured soil the following :

Lyscom,	Porter,
Gravenstein,	Ribstone Pippen,
Hunt's Russett,	Rhode Island Greening,
	Baldwin,
Roxbury Russett,—considered by some a shy bearer.	

In light warm soil the Yellow Bell-flower can be recommended ; and in strong retentive soil the Pickman Pippin. Other fine apples are the

Minister,	
Cann or Seaver's Sweeting,	Danvers Winter Sweet,
Haskell Sweet,	Hubbardston Nonesuch.
Mother,—a fine fall fruit from Bolton, Mass.	

This apple, Mr. I. considered to stand at the head of our winter kinds ; not so acid as the Baldwin, and at least six weeks earlier for eating. It may be known by its yellow flesh. A spurious kind has its new wood and growing shoots of a pendant habit. One of the greatest acquisitions to our winter apples is the Red Russett, first grown in Hampton and brought from eastern New Hampshire. It is of the size of the Baldwin, more handsomely colored, of a golden yellow, interspersed with bright red ; heavier and more solid and will keep well until Spring ; it ought to be generally cultivated.

Mr. Ives made some remarks upon the

Alexander,	Peck's Pleasant,
Fall Pippin,	Jonathan,
Sweet Pearmain.	

In the cultivation of fruit, Mr. I. declared his conviction that birds were more useful than prejudicial in orchards, especially in the season of the year when they feed their young. The *Ampelis* or Waxen Chatterer, so much disliked in some sections, he had found exceedingly useful in helping to destroy the canker worm, which often is so prevalent among apple trees.

At the conclusion of the reading of this paper, the chair corroborated many of Mr. Ives's statements. From his own experience, mentioned some facts about some of the sorts of apples, spoke of the means of encouraging fruit culture, thanked Mr. Ives for his communication, feeling assured that he would be amply repaid if he should succeed in diffusing a wider taste for the cultivation of orchards and fruit trees.

The Institute now adjourned.

*Thursday, February 10, 1859.*

**Evening Meeting.** The meeting of the Essex Institute was held at the rooms at 7 1-2 o'clock, Henry M. Brooks, Vice President in History presiding.

The Records of the preceding meeting were read.

Donations since the meeting of the 27th ult., were read.

*To the Library*—from Charles B. Norton of New York ; J. F. Worcester ; James Kimball ; Hickling, Swan & Brewer, Boston ; Canadian Institute at Toronto ; Timothy Davis, M. C. ; Charles L. Peirson ; Humphrey Devereux.

*To the Cabinets*—from J. N. Martin ; Charles L. Peirson ; James Kimball ; Henry M. Brooks ; Zoological Museum at Cambridge, (in exchange.)

Rev. C. C. BEAMAN then read a very interesting and able sketch of the life, character and services of the patriot, JAMES OTIS, who was born at West Barnstable, Feb. 5, 1725; graduated at Harvard College in 1748; thundered against the writs of assistance in 1761; was the foremost among the orators of the anti-revolutionary period, until his usefulness was impaired, by a ruffianly assault, in the British Coffee House in 1769; and was killed by a flash of lightning at Mr. Isaac Osgood's house in Andover, May 23, 1783.

On motion of David Roberts, Esq., who offered some remarks on the subject of writs of assistance, the thanks of the Institute were voted unanimously to Mr. Beaman, for his interesting and valuable paper.

Dr. HENRY WHEATLAND next offered a few remarks to the consideration of the meeting, introductory to the resolves which are subjoined. He mentioned that the site of the building, in which the members of the Institute were then assembled, was owned, a century since, by Joseph Bowditch, for a great number of years Clerk of the Court and Justice of the Peace; and it may be safely affirmed that there was not, in the town of Salem, a gentleman of more respectability than "Squire Bowditch," as he was universally called. He was a man of wonderful humor, and there are many pleasant stories related of him. He died in 1780, at the age of 80. This estate is undoubtedly the homestead which he inherited from his father, William Bowditch. If so, then this spot can be noted as the homestead of the ancestors of Dr. Nathaniel Bowditch. Dr. B's grandfather was the brother of the above Joseph.

At Joseph's death he bequeathed it to his daughter, Mrs. Elizabeth Jeffry, from whom it descended to her daughter, the wife of Hon Nathan Read, a Representative in Congress from this District. In 1799, it was sold to Capt. Joseph Peabody, and remained in possession of his family until it was conveyed to the Proprietors of the Salem Athenæum, to

erect thereon **PLUMMER HALL**, from funds bequeathed by the late Miss Caroline Plummer.

The house formerly on this site was in the antique style. Its front was on the line of the edge stones of the present sidewalk. In 1793, Mr. Read erected the house, which is familiar to all of us in the rear of the old mansion. It was designed by, and built under the direction of Samuel Mackintire, whose fine architectural skill is shown in many of our buildings, both private and public, erected about the close of the last and the beginning of the current century. The present Superintendent of streets, Col. Perley Putnam, yet a hale and hearty octogenarian, worked on this building when an apprentice.—Soon after its completion, it was occupied for a few years by the Hon. William Prescott, his occupancy embracing the period of the birth and infancy of his son, **WILLIAM HICKLING PRESCOTT**. It is a singular coincidence that the site, on which stands Plummer Hall, should be memorable as the birth-place of the historian Prescott, and, if our presumption is correct, the homestead, for several generations, of the ancestors of Dr. Bowditch.

In this connection, it may not be inappropriate to read the following letter from Mr. Prescott, addressed to Dr Geo. Choate, the chairman of the committee of arrangements for the dedication of Plummer Hall, in reply to an invitation to be present on that occasion :—

PEPPERELL, Oct. 6, 1857.

Dear Sir: I last evening had the pleasure of receiving the invitation of the Committee to attend the dedication of Plummer Hall. Unfortunately being absent from town it did not reach me till too late to profit by it. I beg you will present my acknowledgements to the Committee for the honor they have done me. I need not assure them that I take a sincere interest in the ceremonies of the day; for I am attached to Salem by the reminiscences of many happy hours passed there in boyhood; and I have a particular interest in the spot which is to be covered with the new edifice from its having been that on which I first saw the light my-

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self. It is a pleasant thought to me that, through the enlightened liberality of my deceased friend Miss Plummer, it is now to be consecrated to so noble a purpose.

With great respect,  
believe me, dear sir,  
very truly yours,  
WM. H. PRESCOTT.

Allow me to present to your consideration the following resolves, which I trust will meet your approval:

#### RESOLVES.

*Whereas*, since the last meeting of the Essex Institute, the community have learned with regret, the sudden decease of WILLIAM HICKLING PRESCOTT, whose life under peculiar circumstances, has been devoted to literary labor and historic research, and whose genius, industry and patience have won for him an honored name among the most eminent historians—therefore

*Resolved*, That, as Members of the Essex Institute, assembled on the spot where he first saw the light of day, we deeply deplore the loss of one whose subsequent career of life has been rendered brilliant by his many and valuable contributions to History and Literature, and whose genial and kindly disposition and faithful affections have endeared him to a large circle of associates and friends.

*Resolved*, That the President be requested to transmit an authenticated copy of these Resolves to the family of the deceased and tender to them our sympathy and condolence in their bereavement.

The Secretary then read the following letter to the Institute, from the Hon. DANIEL A. WHITE, who, on account of the state of his health, was unable to be present:

*To the Members of Essex Institute:*

GENTLEMEN,—I deeply regret that my present state of health allows me no hope that I shall be able to attend your meeting to-morrow. I feel a strong desire to unite with you in some appropriate testimonial of our heartfelt respect for the memory of the late illustrious and beloved historian,

Wm. H. Prescott. As I cannot be with you on this interesting occasion, I wish, as far as I can, to comply with the request made to me, that I would communicate my reminiscence of Mr. Prescott's early life, especially that portion of it which was passed in Salem. But hardly feel able at this moment to do it, and certainly cannot as I would. I shall not attempt anything more than what may in some degree serve to illustrate the circumstances of his education and the influences under which his character was formed or grew up. When he was about eight years old I became acquainted with his parents, and was kindly and hospitably welcomed at their fireside. I have a distinct impression of William's appearance at that time and till his preparation for college.

He was a fine looking boy, bright and full of joyous spirits, very promising in every point of view, and evidently a darling in the family. Everything was done for him conducive to his best improvement. His father, together with several other gentlemen in Salem, engaged at a high salary the ablest instructor they could obtain, to be devoted to their sons. Jacob Newman Knapp, one of the most thorough scholars of the distinguished class of 1802, in Harvard College, was the instructor. He was justly regarded as a superior teacher. William entered Mr. Knapp's school in his seventh year, and continued under his care about six years. "His favorite studies," says his now venerable instructor, "were Latin, Greek, and History. Nothing delighted him so much as to read of heroic actions. He was in all his studies among the best students of the school. When his parents removed from Salem to Boston, he was put under the care of Dr. Gardner, Episcopal minister."

But it was in the bosom of his own family that young Prescott enjoyed advantages that most distinguished him above all others in his youth. He had, in his parents, constant teachers of the highest order. Eminent as was his father in public and professional life, he was still more remarkable for his integrity and honor, his practical wisdom and goodness, and his amiable and courteous disposition and manners in the various relations of private and social life. I was privileged to see him familiarly in his family, in a social club, and in professional consultations, when he disclosed his sentiments and opinions with confidential frankness, and I can recollect nothing that ever occurred to diminish my

profound respect for him, or my admiration of his whole example. Mrs. Prescott was not less remarkable for all those virtues which distinguish the highly cultivated, generous and truly accomplished Christian woman. Such were the parents, and they were as united in their views as in their affection regarding their cherished son; who, I feel sure, never witnessed a discordant word or look, while he was made to feel entirely free to speak out his inmost thoughts. I remember an interesting visit to his father, soon after his removal from Salem to Boston, and I remember it distinctly from the impression made upon me by William's freedom of speech in some discussions with his father,—a freedom which then struck me as uncommon, though in no degree disrespectful. In such unrestrained indulgences on the part of the father, there was doubtless sagacity as well as love, for thus he could learn the real mind and heart of the son, and be prepared to correct any wayward tendencies that might appear; and the correction, if ever needed, would be sure to come without chiding or reproach, and in a manner perhaps as unfelt as it would be effective.

The same vigilant affection and devoted care followed William into his maturer years, and were but deepened by the sad misfortune that befel his eyes; relieving him from all solicitude about a professional income, and enabling him fully to pursue and gratify his predominant literary tastes. Hence the natural growth of his genuine, consistent and unchanged character; the origin of his devotion to the writing of history, and in his wonderful success and celebrity.

The dedication of his first History to his father touchingly adds:

"The guide of my youth,  
My best friend in riper years."

It was natural that the sudden death of such a man and such a historian should produce a profound sensation throughout the country and the literary world. The gratitude and admiration so universally inspired by his works and his virtues sufficiently account for it. But the death of a historian so renowned for his fidelity and truthfulness is a great public loss. It is a loss to the Essex Institute, particularly in the historical department, as it is to all historical societies, and all readers everywhere who appreciate the im-



portance of true and faithful history. Much as Mr. Prescott had accomplished for us, we were earnestly hoping for the completion of at least one more great historical work.

*"Videtur acerba semper et immatura mors eorum qui immortale aliquid parant."*

But let us remember that greater than all his works was his own pure, lovely, rich and genuine Christian character, and that death has but set its seal on this and secured it to us forever in all its beauty and completeness. Let us then turn from the day of his death to that of his birth, and let the 4th of May be adopted as one of our historical anniversaries. No where could the observance of this birth day be more useful or awaken more interesting associations. Mr. Prescott was a native of Salem and born on the very spot where now stands Plummer Hall, the seat of the Essex Institute. The noble benefactress too, whose name the Hall bears, was here to rejoice at his birth, as the intimate and life-long friend of his admirable mother. The utility of such an anniversary is alone sufficient to commend its adoption. The right use of the materials of history is even more important than their collection. The name of William Hickling Prescott will at once suggest the various lessons of instruction on this subject most worthy of annual consideration; as it will always render the anniversary a delightful one.

Very respectfully,

D. A. WHITE.

Washington street, Salem, Feb. 9, 1859.

THOMAS TRASK, Esq., moved the adoption of the resolutions, and, upon rising to second the motion, JACOB BATCHELDER, Esq., of the Salem Classical and High School, said:—

When the announcement was suddenly made of the death of the eminent historian, WILLIAM H. PRESCOTT, the whole busy thinking life of this land paused at the moment, at first in surprise, and next in sorrow, that the radiant light, which had so long illumined its whole pathway, and permeated its inmost being, had been turned from its wonted abode in this mortal sphere to mingle its beams with the lustre of immortal life.

And now that the sorrowing wail of his surviving kindred, the subdued grief of his more intimate friends and associates,

have mingled their tones in mournful cadence, borne through this land, and soon to be re-echoed from Trans-Atlantic shores,—it is eminently befitting the occasion furnished by this sad event, that a sympathizing strain should emanate from the midst of those who were privileged to behold the rising dawn of the bright spirit which, “Like an angel’s wing in the op’ning cloud,” has blessed our sight for a little, and then departed, leaving its beautiful impress on our souls forever.

It is fit that this assembly, standing over the spot on which Prescott was born, should vindicate their right and claim, to weave, among the memories and associations of Plummer Hall, this signal event,—this undisputed historical triumph.

We, most of us, knew little of the man, though we respected the indomitable energy that conquered opposing and to most men irresistible obstacles, to pour out the great effusions of his teeming soul; but now that the pure, the modest and unassuming, the patient and cheerful, the disinterested christian spirit gives its mild radiance in a brighter sphere, the lips of his loved ones are unsealed, and they tell us all their loss and our unspeakable gain, for it needed but Prescott’s death to enable all who read with instruction and delight the luminous pages of his works—to mingle with them, and every pause for digestive thought, the memory of the qualities of the man, more to be loved and revered than the fame of the historian.

We have said what our hearts prompted us to utter. And, while storing our minds with the treasures he has left us, we would open our hearts to the wholesome influences of his blameless life.

And when succeeding ages shall bless the munificence of the founder of this noble structure, may the names of PLUMMER and PRESCOTT evermore be blended,—the one as the donor by whose beneficence, by a felicitous concurrence of events, this Hall, with its surroundings, stands as an appropriate monument of the birth of the latter.

Prof. ALPHEUS CROSBY, of the State Normal School in Salem, next addressed the meeting.

Mr Crosby spoke of the various interesting associations connected with Plummer Hall and the spot on which it is

situated. The associations which were most prominent in our minds, as we assembled this evening, were those relating to the great historian who had deceased since our last meeting. This was the spot where that bright light was first kindled. This was the scene of the boyish feats of him who had achieved such renown by describing the feats of others, —a renown more enviable than that of the most of those who had performed these exploits. Here was that early development of mind and character, which had been so happily described by Judge White. Then the mind went forward to school and college days—to the piece of bread thrown in the Commons Hall, by a light hearted college mate, which closed against young Prescott the avenue to usefulness and distinction which he had before contemplated, and led him to enter that in which he had achieved such a brilliant success.

Mr. C. then remarked upon the admirable judgment with which Mr. P. had selected his field of labor. The man who writes a philosophical or scientific treatise may gain a high reputation, but he is not read by the masses; he must content himself with the "fit audience, though few." On the other hand, the writer of fiction is read by great numbers, but wins not the homage of the learned; and for the most part, his writings are hastily read once, and then forgotten. Works of this kind chase one another, each effacing the impression of the preceding, like waves upon the sea shore. The department of the historian is intermediate, combining the interest of the novel, with the instruction of the philosophical treatise; he writes that which, if well written on a well selected theme, is read and admired alike by the learned and the unlearned, by the scholar and the man of business, by the philosopher and the operative, by the select few and the great masses.

Mr. C. then spoke of each of the three great obstacles to greatness which Mr. P. had conquered: his blindness, an especial obstacle to historical research, and one which most men would think insurmountable; his wealth, as far greater obstacle than poverty, but which he had lavished in procuring the means of prosecuting his investigations; his social position, continually tempting him, in connection with his most amiable disposition, to expend his time and talent in the interesting and brilliant family and social circles to

which he belonged, diffusing pleasure all around him, and winning flattering regard from all, instead of withdrawing to the loneliness of study, dark and painful through his infirmity, and there poring over the scenes of the dead past, which he made to live again. What an example has he set by his resolution in overcoming these difficulties and temptations, and winning such honor for himself, for his country, and for this, the spot of his birth; and how fitting that we, upon this spot, should return, so far as we may, the honor received, by joining with the whole heart in the universal tribute of regard, affection, and sorrow which his departure is calling forth from his country, and will soon call forth from the civilized world.

At the conclusion of Prof. Crosby's remarks the Resolves were unanimously adopted and the Institute adjourned.

*Thursday, February 24, 1859.*

Evening Meeting at 7 1-2 o'clock, Vice President John L. Russell in the chair.

Records of the preceding meeting were read.

Donations since the last meeting on the tenth instant were announced.

*To the Library*—from L. A. Letour of Montreal, C. E.; C. T. Thayer of Beverly; Thomas H. Lefavour; E. M. Stone of Providence, R. I.; William H. Kilby of Eastport, Maine; William Brown.

*To the Cabinets*—from George Russell; J. N. Martin; Thomas H. Lefavour; Allen Jacobs of Danvers; Simeon Shurtleff of Westfield; Lincoln R. Stone; James Kimball.

Letters from Dr. Simeon Shurtleff of Westfield, relating to exchange of specimens of plants; from Burns and Halsted of New York, N. Y.; James M. Barnard of Boston; George Russell; James P. Kimball.

LINCOLN R. STONE read a Report on the painting, representing one of the witchcraft trials, that of George Jacobs, which has recently been presented to the Institute, by Messrs. R. W. Ropes & Co., and which occupies a prominent position over the landing of the Main stairway to the second story of Plummer Hall.

IRA J. PATCH presented a certified copy of all the proceedings of this trial, from the Records in the office of the Clerk of the Courts for this county, and read such portions as were deemed most pertinent, interspersing the reading with interesting explanatory comments. Mr. P. complimented the painting as a faithful portraiture of the trial, so far as could be determined from a perusal of the documents.

After a few remarks from the Chair, a vote of thanks was passed to Messrs. Stone and Patch for the communications presented this evening.

The above communications have been printed in the Historical Collections of the Institute. See vol. II, page 49.

Dr. R. H. WHEATLAND mentioned that an interesting specimen of sturgeon (*Acipenser brevirostris*) had recently been presented to the cabinets by Mr. John N. Martin, taken at Rockport. This species is seldom met with in the waters of the county, and, on this account, is a valuable acquisition. The Institute have, several times, been indebted to Mr. Martin for his kindness in contributing specimens of fishes to the collection. For these valuable contributions, Dr. W. suggested that the thanks of the Institute be presented to Mr. M., and they were unanimously voted.

He also mentioned that the specimen of Bream (*Pomotis obesus* of Girard,) spoken of, at a previous meeting, as having been captured in the brooks of this vicinity, has, upon further examination, been found to belong to the genus *Bryttus*.

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The differences between *Bryllus* and *Pomotis* were then pointed out.

The chairman exhibited a section of wood of the Balm of Gilead tree, (*Populus candicans*) presented by Mr. James Kimball. It was interesting as being taken from a tree, the age of which was known, and, consequently, the rapidity of its growth could be ascertained by means other than its annular rings, which were also well defined. Suggestions were then made as to the importance of collecting specimens of the various woods growing in our vicinity or elsewhere. The Institute has in its cabinets a collection of woods from the Philippine Islands, numbering nearly three hundred different varieties. Why not attempt a similar collection of our native woods? It can be easily effected if only two or three persons make the beginning. A commencement once made, its future progress will be successful.

The Institute adjourned.

*Thursday, March 10, 1859.*

Meeting this evening at 7½ o'clock Vice President John L. Russell in the chair. In the absence of the Secretary, Dr. R. H. Wheatland was chosen Secretary *pro tem*. Donations were announced as follows:—

*To the Library*—From Thomas Trask; George Andrews; Miss Ellen M. Fogg; Jona. Cleaves; Geo. F. Read; American Antiquarian Society; S. Augustus Nelson, of Georgetown; James Upton; Mass. Hist. Society; John B. Batchelder; James Chamberlain; John Ropes.

*To the Cabinets*—From Samuel Preston, of Danvers; Mrs. Chas. Mugford; Jos. True; Amos Henfield; John Ropes; F. W. Putnam; C. Girard, of Washington, D. C.; Smithsonian Institution; Charles H. Price.

Letters were read from Geo. Suckley, of New York; R. Kennicott, of West Northfield, Ill.; William Stimpson, of Washington, D.C.; and from Hon. T. Davis, M. C., forwarding documents of 35th Congress.

The Chair occupied a portion of the evening in reading the articles on "Grafting with Fruit Buds," and the "Hubbard and Autumnal Marrow Squashes," which appeared in the February and March numbers of Hovey's Magazine of Horticulture, commenting on the articles as he proceeded. He fully agreed with the writer of the first article, respecting the alleged value of the practice, which, however, was neither new nor exclusively a French invention, as claimed under the name of *Graft Luizet*; Mr. Hovey, in the above article, shows conclusively that, many years previous to the date of the claimed discovery, the late Capt. Josiah Lovett of Beverly, had practised it with success. The Chair also brought forward from his own recollection, instances of the same practice, and called upon any pomologists present to offer any facts known to them on the same process of fruit culture. Mr. Lovett's well known enterprise and eminent success in his use of the method (which we have reasons to think was shown him by Mr. John M. Ives, and employed, previously, in his own nursery grounds in North Salem,) should be a matter of interest to his fellow citizens. The article was recommended to general perusal for its value and the circumstances connecting it with the interests of the Essex Institute.

The Chair, related what he knew of the origin of the celebrated Autumnal Marrow Squash, which that gentleman was so prominent in extensively distributing. He spoke of the first description as it appeared in the *New England Farmer*, (1834,) written by himself—and of the beautiful and accurate wood cut, executed by Dr. Geo. A. Perkins of this city; of the enthusiasm of the late Hon. John Lowell, in regard

to its merits as a fine new garden production, and of the peculiar form of its seeds, the shape of its stem, the character of its skin or rind, and the delicacy of its flesh for cooking purposes, especially in regard to its grain. This led him to point out the differences between the *squashes* properly so called, and the *pumpkins*, to which the Marrow and Hubbard really belonged: the squashes being coarser and fibrous, while the pumpkins were drier and sweeter, and devoid of fibre. He considered the Hubbard the best article for that Yankee "institution," pumpkin pie, far before the old field pumpkin, with its golden rind so temptingly splendid in the "late October's sun." He claimed for the American trophies the squash and pumpkin, erroneously attributed to the East Indies, and believed that many kinds were early known among the Indians, from whom our Puritan gardens may have received them. He also recommended to those curious in such matters, Mr. J. J. H. Gregory's valuable article on the "Hubbard Squash," which appeared in the February number of Hovey's Magazine, and insisted with the writer on the importance of preserving, with zealous care, the purity of the seeds of all new varieties of garden and field husbandry; also, of preserving specimens of such seeds for any future comparison. As a department of the Institute's herbarium is devoted to this special purpose, it is to be hoped that this hint will be taken, and that our cultivators will forward authentic specimens of valuable seeds for preservation. Small parcels of such seeds or specimens of the smaller fruits originating among them—the former in papers, and the latter in vials or bottles filled with alcohol, and marked with the name of the variety and that of the donor,—will be carefully preserved by the Curator.

Some conversation followed, in which Messrs. L. Woodberry, George P. Bradford, T. Ropes and others participated.

Dr. R. H. Wheatland called the attention of the meeting



to some valuable specimens of Fish, that had been received from the Smithsonian Institution, among which he spoke of the genus *Schilbe*, from the river Nile; specimens of young *Amia*, from Illinois; and a *Goniodont*, from Para river, &c. Dr. W. mentioned, also, that we had received from C. Girard, of Washington, some of his original specimens of *Pomotis obesus* and *Esox ornatus*, which established the identity of the former with the *Bryttus* lately taken in this county, and that of the latter with the *Esox fasciatus* of DeKay.

Dr. Wheatland likewise alluded to the elegant collection of bird-skins from the East Indies, lately presented to the Institute by Mrs. Charles Mugford, of this city, which is considered one of the most valuable collections ever made to this Department, consisting of fifty-two species and about one hundred specimens. He concluded by proposing a vote of thanks to Mrs. Mugford, which, after a few remarks from the Chair, who spoke of the excellent state of preservation of the specimens, and of their value in a scientific point of view, was unanimously passed.

Mr. George P. Bradford presented a specimen of the *Acer striatum*, or Moose Wood, taken from one of a number of trees found growing near the boundary between Salem and Swampscott. The Chair expressed his gratification at the receipt of this specimen, the knowledge of this species being found in this immediate neighborhood, was communicated to him by Mr. B. To whom also, was due the discovery, in North Salem, the last summer, of the *Thlaspi arvense*, a rare and British species of Shepherd's Purse, with large conspicuous, and flat, circular pods.

The Institute then adjourned.

Thursday, March 24, 1859.

Evening Meeting at 7 1-2 o'clock, Vice President John L. Russell in the Chair. Records of preceding meeting read.

Donations were announced as follows:—

*To the Library*—From the Academy of Science at Saint Louis; W. H. Prince of Northampton; F. V. Hayden of Washington, D.C.; Philadelphia Academy of Natural Sciences; F. W. Putnam; George F. H. Markoe; John C. Holmes of Lansing, Mich.; Mrs. Joshua Ward; J. Wingate Thornton of Boston; M. A. Stickney; James M. Caller; James S. Bryant of Hartford, Conn.; C. Benjamin Richardson of New York, N.Y.; Henry A. Chase; John L. Sibley of Cambridge; Ohio Mechanics' Institute, at Cincinnati.

*To the Cabinets*—F. W. Putnam; Henry F. Shepard; Thomas Trask; Jose B. Oliver; B. F. Mudge of Lynn; Charles E. Brown; Joseph True; Forrest Shepard of New Haven, Conn; W. G. Webb; C. F. Williams; Amos Henfield; John S. Ives; Wm. H. Foster; R. P. Waters; Smithsonian Institution; Zoological Museum at Cambridge, (in exchange.)

Letters were read from Hugh M. Neisler of Butler, Taylor Co., Georgia; N. I. Bowditch, of Boston; Saint Louis Academy of Science, and Charles F. Williams.

The Chair stated that he had recently received for the herbarium, from James M. Caller, specimens of the fruit of the *Quercus agilops* and *Terminalia chebula*. The acorns and cups of the former are imported from the south of Europe under the name of *Velonia*. The nuts of the latter, from East Indies, under that of *Myrobalanus*. Both are used for tanning in England, but not in this country, at least to any extent. In this connection he spoke of the great ad-

vantage that would be conferred upon the community, if persons, in their travels, would preserve a few of the numerous articles that fall within their notice, such as books of local character, seed vessels, and other natural productions—many of which could be obtained and brought home with but little trouble. The Chair also alluded to some Bunga weed, or *Cannabis sativa*, Hemp,—used by the natives of Zanzibar, for smoking, which had been recently presented, with other articles of interest, by William G. Webb. The Hemp, when grown in warm climates, possesses more narcotic qualities than in more temperate regions.

Some flowers of the *Hepatica triloba*, collected by Henry J. Cross, on the Saturday preceding, were also placed upon the table, and were the subject of some remarks from the Chair, who mentioned an unsuccessful search of an hour, some days since, for the *Draba verna*, usually among the earliest of our Spring flowers. As the locality for this plant is the only one known to him in this vicinity, he fears that it may have been eradicated by collectors in previous years, though he hoped specimens might still be found there.

A shoot of the Grape Vine, which had been ringed the past season, was presented, when the Chairman called upon Mr. J. M. Ives to speak of this practice of ringing vines.

Mr. Ives observed that the crude sap of the vine passed up in the Laburnum or sap Wood, to the leaves (which may be said to be analogous to the lungs in animals,) where it is elaborated and rendered fit for the growth of wood and fruits, when it passes down the nerves or the leaves to the leaf stock in or through the cambium, until it reaches the ringed part. It is then thrown back, enlarging the limb and fruit, and accelerating its ripening. He also read a paper on the Blight in Pear Trees. Of the Insect blight of Prof. Peck, which was quite prevalent around Boston some years since, and was attributed, at that time, to the insect denominated *Scolytus*, we now hear but little, if anything. At that day, many practical cultivators were sceptical as regards this insect being the

cause of all the mischief; thus, one writing at that time, says: "those of my trees that are affected are growing in my highly manured vegetable garden, and all those in my grass land, which is seldom manured, are entirely free from the disease, and my opinion is, that a corrupt state of the juices arising from excessive manuring is the cause of the evil." Another writes: "We doubt whether the 'Scolytus' can be the perpetrator of all the mischief; a gardener of my acquaintance had honeysuckles growing around some of his Pear trees; these were then free from blight. After clearing away these vines, he manured and dug over the land; he thus dug the grave for his fine trees. Let us suffer our trees, as they are *coming* into a bearing state to vegetate *naturally*; they will be a little more tardy in growing up, but they will be hardy, healthy, and bear well. That ground may be too rich for Pear trees, there can be no doubt, producing the disease of repletion." *Still another*: "My trees in highly manured land, or in low and rich soils, have been most seriously affected; while those on my high and uncultivated soil, have escaped infection. So far my experience accords with Duhamel's theory."

Other instances were brought forward by Mr. Ives. He spoke of recent article from Illinois, where it was computed that the loss of fruit for a few years past in that State, would amount to three millions of dollars, and that this destruction was said to be owing to "the *retentive*, clayey subsoil, and that farmers are now plowing furrows and throwing up the land into ridges, commencing at the same ridges, and ending at the same furrow, to remedy this evil." He did not apprehend that this could be simply owing to the clayey subsoil, *provided* it does not retain water, for here we find that the Pear tree flourishes better on land with a subsoil or pan of clay, which prevents the roots running too deep. The difficulty, he thought, was in the adhesiveness or peculiar quality of their clay which *prevents* the *percolation* of water *through* it.

He closed by a reference to the blight of the Pear, so common at the West, believing that there are in general two forms of Blight, one caused by a severe scald, produced by taking off or denuding young trees of their lateral or side branches, thereby exposing their naked trunks to the sun,

when thus denuded. The other form, or what is called Frozen Sap Blight, takes place ordinarily upon trees that are forced in strong and highly manured soil, thereby causing the trees to make long, succulent shoots, the growth extending to so late a period as to be overtaken by the winter before the sap is sufficiently elaborated, and the wood matured to stand a severe freezing; and rich soil with manure, or excess of moisture, increases this evil. Duhamel, many years since, spoke of a diseased state of the sap arising from excess of manure, which seems analogous to ours: "The sap corrupted by putrid water, or the excess of manure, bursts the cellular membranes in some places, extending itself between the wood and the bark, which it separates, and carries its poisonous acrid influence to all the neighboring parts like a gangrene." Naturally rich and fresh loam is all he apprehended young trees to require at transplanting.

At the conclusion of M. Ives's remarks, the Chair continued the subject, speaking of the circulation of the sap, and its effect upon the girdled limbs, and also of the subject of blight in pear trees, enumerating some of its causes, such as injudicious pruning, the unsuitableness of the climate, &c.

Mr. GEO. D. PHIPPEN gave some account of his experience in girdling grape vines, and also spoke of the manner of the healing process in trees, when the bark has been peeled of.

The Secretary then exhibited to the meeting a specimen of grafting of a different character from any that had been previously mentioned. This he was enabled to do through the kindness of Mr. Thomas McCord, who loaned it for this occasion. This specimen consisted of the head of a Cock, in which the spurs had been taken from the legs and grafted upon the comb—giving the resemblance of the horns of ram, curving forwards and downwards. It is a well known fact in physiology, that when the spurs are transplanted from the leg to the comb, which abounds in blood, the growth of the spur is marvellously augmented, and increases to a long,

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strange looking mass of horny matter. This specimen was brought from the West Coast of Africa, where we understand that this practice prevails among the inhabitants, giving a strange and unusual appearance to the bird.

The Institute then adjourned.

*Thursday, April 14, 1859.*

Evening Meeting at 7½ o'clock. Vice President Russell in the chair. Records of preceding meeting were read. Donations were announced as follows:—

*To the Cabinets*—From B. F. Mudge of Lynn; Amos Henfield; A. F. Bosson; Mrs. Eliza Burr; Alfred Walcott; Zoological Museum of Cambridge; Gardner L. Chandler; Samuel Tufts, jr., of Lynn.

*To the Library*—From C. W. Palfrey; F. H. Lee; Lyceum of Natural History of New York; Adams, Sampson & Co., Boston; Chicago Historical Society; Charles W. Swasey; M. A. Stickney; Societe Historique de Montreal; W. P. Tucker of Brunswick, Maine; Jos. Cloutman.

Letters were announced from James S. Bryant of Hartford; Smithsonian Institution.

Some remarks were made by the Secretary in reference to a portrait of Rev. Edward Barnard of Haverhill, who died in 1774, aged 54. He was grandfather to the late Capt. Edward Barnard, who died in this city, a few months since. The portrait was presented by the family of the late Mr. Barnard, through his son, Mr. Thomas Barnard, of Tallahassee, Florida. It is gratifying to find that several portraits of the old worthies of the county have recently been added to

the Institute. It is well to have these memorials of the past deposited in suitable places where they can be seen and examined by all, particularly those who are conversant with antique lore.

In addition to the portrait alluded to, Mr. Barnard also presented a number of the manuscript sermons of his ancestors, several of whom were ministers.

Mr. J. M. Ives being then called upon by the Chair, offered some remarks on the importance of raising seed, which requires more attention and care on the part of producers than is usually bestowed. He stated that the seed of the cabbage should not be raised on the mere stumps after removing the head, but that the whole plant should be set out in the Spring, and the seed gathered always from the central stem and not from the lateral or side branches. This was applicable also to the beet, carrot, turnip, &c. The subject of the potato being introduced, he mentioned that it had been said in England that the potato usually continued its productiveness and quality about 14 years—after that time a slight deterioration was perceptible, particularly in their productiveness. Among the examples adduced was the Jackson potato which is not as productive the present time as when first introduced. He also remarked that it had been noticed in England that potatoes planted upon peat land, in moss, were but slightly affected as the potato rot, as also those planted on land dressed with wood ashes alone.

These subjects were further discussed by Messrs. L. Woodberry, J. H. Phippen, S. B. Buttrick, James Kimball, and the Chair.

The Institute adjourned.

*Thursday, April 28, 1859.*

Evening Meeting at 7½ o'clock. Vice President John L. Russell in the Chair.

Records of preceding meeting read. Donations were announced as follows, since the meeting of the 14th of April, viz :—

*To the Library*—from the Canadian Institute, at Toronto; Montreal Society of Natural History; Philadelphia Academy of Natural Science; Congregational Library Association at Boston; Mrs. L. P. Johnson; John H. Stone; S. Johnson; A. Crosby; J. F. Allen; J. F. Webb; J. L. Sibley of Cambridge.

*To the Cabinets*—James A. Emmerton; F. Winsor; R. H. Wheatland; Museum of Comparative Zoology at Cambridge, in exchange; J. H. Eagleston; S. Shreve; Miss M. J. Scobie; Miss J. H. Wood, by Temple Hardy.

A letter was read from Saint Louis Academy of Science, acknowledging the receipt of the Proceedings of the Institute.

Dr. R. H. WHEATLAND mentioned that, on the 15th inst., he had taken in the Marshes near Nahant Beach, several specimens of a new species of Stickleback. In general appearance it somewhat resembles the common two-spined species, but differs so much in several of its characters that it can hardly belong even to the same genus. He stated that while but three species are described from Massachusetts, we have in Essex County certainly five, and probably seven species belonging to several genera. Of these three are many spined, three two-spined, and one four-spined.

He then alluded to the great change of color which occurs in fishes at different seasons and under different cir-



cumstances, giving rise often to great confusion in the descriptions, and causing the same species to be described under several different names. This change is in some cases almost instantaneous. He spoke of the splendid coloring of the male sticklebacks during the spawning season, the deep almost black hue of the *occidentalis* contrasting strikingly with the white membranæ of the ventral spines, the brilliant blue and crimson of the *biaculeatus* and the scarlet blotches of the *quadracus*, whence its popular name of the "bloody stickleback." The differences in the bottom and feeding grounds produced a marked variation in the color of fishes, as for instance, in Humphries' and Cedar Ponds. In the former, all the fish without a single exception, are very light colored; in the latter all are dark and strongly marked. The bottom of the former pond is sandy; of the latter, muddy, and filled with water plants. The influence of light has undoubtedly some effect on the coloration of fishes. In the Aquarial Gardens, in Boston, are specimens of *Tautoga Americana*, the Tautog, which have grown from a very small size to a very considerable size, and which are certainly subjected to a much greater degree of light, than in their accustomed abodes. These have lost that peculiar dark color which has given them, in many places, the popular name of "Black Fish," and are so light that one hardly recognizes them without examination. The same holds good with a specimen of *Cottus virginianus*, our common Sculpin. He had noticed a gradual fading of the colors in specimens kept at the Aquarial Gardens, until the original markings had almost entirely disappeared, but this perhaps may have depended on the diet.

In young fish, too, the coloration is often very different from the adult; as for instance,—the young of the *Catostomi*, which have a black band from the snout to the caudal fin, supposed to be characteristic of the black-nosed Dace, with which they are continually confounded.

The change of color, depending probably on the food, is well exemplified in the Rock Cod, which is only a common grey cod, living near the rocks and among the seaweeds, in the Cunners, which often become of a brilliant red, and in the Trout which taken from different streams running out the same lake, or even different portions of the same lake itself, range from a dull grey to the most brilliant hues independently of the brilliant coloration which the males exhibit at certain seasons. He thought that too little notice had been taken of these differences of sex, age, location and season, and too few facts concerning them put on record, and called upon those members of the Institute, of which there are many who have the opportunity of seeing fishes, taken fresh from the water, to observe these facts and give us the benefit of their observations.

In regard to the coloration of fishes. Mr. F. W. PUTMAN agreed with Dr. Wheatland that the variation in the coloration of some species was so great at different ages that the same species was often described as several. He mentioned the instance of *Hypsophrys unimaculatus*, Agassiz—a fish belonging to the *Cromoids*—were, as shown by the investigation of Prof. Agassiz, the young have simple vertical bands, which afterwards, by the union of the color in the centre of the bands, and is fading away above and below these bands are changed, into a lateral stripe, and then in still older specimens this stripe was developed into a single spot. He mentioned also the great constancy of one style of marking in some genera and families; for instance, the *Chaetodontes* have a circular band crossing the eye; and in the family of *Etheostomoids*; (a family of small fresh water fishes, confined to North America, of which there is a large number of genera and species,) there is a characteristic dark mark under the eye. The young *Catostomi* lose the black band which they have from the snout to the tail, when about

one-quarter grown. They are at this period often mistaken for the Black-nosed Dace, as had been remarked by Dr. Wheatland, which they resemble more than they do the adults of their own species, having, a terminal mouth and the under jaw opening downwards. He thought that the manner in which the mouth obtained its adult situation, was by a proportionally faster development of the frontal and ethmoid bones, thus gradually pushing the under jaw downwards. He thought that the change of coloration in the male fish at the spawning time, was identical with that of birds and other animals. The constancy of generic and family marking was by no means confined to fishes, as we see it very strongly in Mammals, Birds and Reptiles, as well as the great changes in the coloration between the young and adult of the same species. For instance, in the Black snakes, (the genus *Bascanion*,) the young are mottled, while all of the species in their adult state are black. The same could be said of other genera of snakes. In *Eutania*, for instance, all of the species are striped.

Mr. Putnam also made some remarks on the nests of fishes. He had lately had the opportunity of seeing the nests of the two spined and many spined stickle backs, *Gasterosteus biaculeatus* and *G. occidentalis* at the Aquarial Gardens. The two spined forms its nest in the open gravel, covers it up with small pieces of weeds, and over the whole places a few small stones; while the many spined builds its nest on the gravel at the roots of the water plants through which it makes a triangular opening. Through this opening the male fish keeps up an almost constant current of water by means of its pectoral fins. These nests differ from those of the European Sticklebacks, one of which the *G. pungitius* constructs its nest of pieces of the water weeds among which it is suspended. It is open at both ends and the eggs are placed in the centre. The male fish in all these species

takes charge of the nest as soon as the eggs are laid, and does not allow even the females to approach. He also continues to protect the young fish for some time after they are hatched. The time of the incubation of the *G. biaculeatus* is fifteen days. The common bream *Pomotis vulgaris* hollow out a place on the borders of the pond, and both sexes keep watch over the nest till the young are hatched. The Horned Pout *Pimelodus atrarius* does the same, but in this species the female alone takes charge of the nest and remains with the young for some time after they are hatched, so that occasionally she is seen surrounded by several hundreds of them.

Mr. C. Cooke called the attention of the Society to the fact of lately finding some of our Crustaceans, the genera *Gammarus*, *Asellus*, *Idotea*, and *Branchipus*, with their eggs, and spoke of the importance of recording these and kindred facts so as to be able to study their development, as but little is known of the younger stages of that class and consequently some confusion had occurred. He mentioned that even by writers of the present day, some of the embryonic forms were mistaken and described for adult animals, as for instance, in the *Megalopida*, the *Marestia*, *Monolepis*, *Megalopa*, &c., which are evidently the young of some of the Cancroidea or Grapsoidea, and wished that persons noticing anything of the kind, would cause a record to be made of the fact.

After the discussion of a few incidental topics by the Chair and others, suggested by the previous remarks, the Institute then adjourned.

*Wednesday, May 11, 1859.*

Annual meeting this day at 3 o'clock, P.M. Vice President Rev. J. L. Russell in the chair.

Records of the preceding Annual Meeting were read.

The donations since the meeting of the 24th of April, were announced as follows, viz:—

*To the Library*—From Henry M. Brooks ; American Geographical and Statistical Society ; Allen Jacobs of Danvers ; Smithsonian Institution.

*To the Cabinets*—From C. K. Stevens of Lawrence.

Letters were received from the Trustees of the New York State Library ; Maine Historical Society ; J. V. Hayden of Washington D.C. ; E. Hervey Quimby ; J. L. Waters of Chicago Ill ; R. P. Lowe, Gov. of Iowa ; A. S. Packard of Brunswick Me. ; B. F. Morrison of Nantucket.

The Report of the Secretary was read and accepted.

The Report of the Treasurer was read and referred to the Finance Committee.

The Reports of the several Curators were read and accepted, viz:—on the Herbarium, by J. L. Russell ; on Mammalogy, by R. H. Wheatland ; on Ornithology, by F. W. Putnam ; on Herpetology and Ichthyology, by R. H. Wheatland ; on Articulata and Radiata, by C. Cooke ; on Comparative Anatomy, by H. Wheatland ; on Mineralogy, by B. F. Mudge ; on the Historical Department, by L. R. Stone.

By these Reports we are informed that a steady and uniform growth is perceptible in nearly all the departments of  
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which the Institute takes cognizance, the number of visitors to the rooms is on the increase, and the general interest in our welfare is encouraging.

The present number of subscribing members is 396—Honorary in virtue of their connexion with the Essex Historical Society, 10—Corresponding, 76. Total, 482. Of these five have deceased during the year. Some tribute should be paid to their memory.

1. THOMAS DOWNING, son of Thomas and Catherine (Williams) Downing was born at Salem, Aug. 20, 1800, and died suddenly on Thursday afternoon, Jan. 27, 1859. He had always resided in Salem, was a successful merchant, and as the head of one of the oldest business firms in the city was ever distinguished for ability, integrity and kind and affable deportment.

2. SAMUEL RICHARD MASURY, son of Samuel and Mary W. (Peirce) Masury, was born at Salem 9th June 1821, resident of Salem with the exception of a few years spent in Zanzibar as a mercantile agent. He was lost on board of the ill-fated steamer Austria, Capt. Heydtman on its passage from Hamburg and Southampton for New York, which was burned Sept. 13, 1858, in lat. 45° 01' N. long 41° 30' W.

3. JOHN GAGE WOOD, a native of Hollis, N.H., for several years a homeopathic physician in Salem—died at Philadelphia on the 29th April 1859, at the residence of his father-in-law, (J. E. James, Esq.,) aged 30.

4. ICHABOD NICHOLS, D.D. He was the fourth son of Capt. Ichabod and Sarah (Ropes) Nichols, of Salem, and was born at Portsmouth, N.H. during a temporary residence of the family in that place, on the 5th of July 1784—graduated at Harvard College in the class of 1804—Tutor in Har-

vard 1805 to 1809—on the 7th of Jan. 1809 was ordained as colleague with Rev. Samuel Deane D.D. of the First Church in Portland, Me. In this position he continued his labors, until about four years since when he removed to Cambridge, where he died on Sunday Jan. 2, 1859.

5. Rev. ISAAC BRAMAM, son of Sylvester and Experience (Blanchard) Braman, was born at Norton, Mass., 5th July 1770—graduated at Harvard College in 1794 and for several years has been the only survivor of his class. Ordained 7th of June 1797 pastor of the Second Parish, in Rowley now Georgetown; in this place he continued to officiate until his death, a period of more than sixty years, which took place on Friday, 26th of December, 1858.

During the past season six Field Meetings have been held, viz: at Nahant, Newburyport, Lynnfield Centre, North Danvers, Marblehead and Essex. They were very fully attended, and the interest continues unabated.

Ten Evening Meetings have been held on the second and fourth Thursdays of December, January, February, March and April—also the Quarterly and occasional meetings on Wednesdays for the election of members and the transaction of the current business.

Rev. J. L. Russell delivered a course of thirteen lectures on Botany, in the rooms, during the winter and spring, which were well attended, and awakened a considerable degree of interest in this branch of Natural History.

In August last, part I of Vol. ii. of the Proceedings was ready for delivery—containing 192 pages and a lithograph plate to accompany Dr. Weinland's paper on the Egg tooth of the Snake.

In accordance with the desire of several of our Historical members, that abstracts of the records of our county and those of the towns and parishes within its limits, should be printed—also historical papers and memoirs of those who have been prominent in their time, and have contributed to the public weal. A serial publication has been commenced devoted to these subjects, under the title of the Historical Collections of the Essex Institute.

The following additions during the year may be specified.

**TO THE LIBRARY.** Many valuable works have been added, with a few exceptions donations from individuals, societies, the State and General Governments, &c. A complete set of the publications by order of the thirty-fourth Congress in 103 volumes—also files of the Legislative and Executive documents of the state of New York, City documents of Boston from the Government of that city, may be mentioned.

Additions during the year from all sources :

Folios,	48
Quartos,	64
Octavos and lesser-fold,	333
	— 445
Serials,	432
Pamphlets,	950—1382
	<hr/> 1827

The above have been received from one hundred and nineteen individuals, societies, &c.

**TO THE DEPARTMENT OF NATURAL HISTORY.** *Mammals.* Several valuable additions from 13 donors.



*Ornithology.* Many additions, some of which are of the greatest importance—from 17 donors. The number of specimens in this department is as follows: of North American Birds (mounted) 300 species; in alcohol, 50 species; of foreign Birds 200 species, mounted; embryos of 25 species of native Birds. Of Nests, we have 82 species of American and 12 specimens of Foreign; Eggs 113 species, 300 specimens of North American, of which 87 species are known, 77 species 160 specimens of Foreign.

*Herpetology.* Sixteen donors have contributed 282 specimens, among which are 51 species new to the collection, and several that are as yet undescribed.

*Ichthyology.* Forty-two donors have presented more than 1200 specimens of North American Fishes during the year, and of these, 89 species were new to the collection, and 62 species of Foreign Fishes also new to us. Many species of Fishes have been found in the waters of Massachusetts, that heretofore were not known as inhabitants of the state.

The collections of *Insects and Crustacea* have increased very rapidly since our removal to the new rooms in October 1857—thanks to the generosity of 35 donors who have sent us specimens from different localities in North America, Africa, South America, and the East and West Indies. The alcoholic portion of these collections have been formed principally since our removal to these rooms, and is now one of the most valuable departments. The dried Insects are in good condition, but owing to the want of proper cases they have not yet been arranged. The additions during the year are as follows:

Dried Insects,	5000 specimens,
Alcoholic “	560 “
Dried Crustacea,	221 “
Alcoholic “	474 “

There have also been a number of specimens of *Worms* presented during the past year, but this class of animals has never received the attentions from collectors that it deserves.

There have been many additions to the class of *Mollurca*, both alcoholic and dried, from 17 donors.

*Radiates.* We have received additions from 8 persons. The most important donation is from James M. Barnard, Esq., of Boston, who presented a large number of Echini and Star Fishes from the Sandwich Islands, many of them being types of new species in his collection.

*Comparative Anatomy.* There have been 15 donations of skulls and skeletons, &c., to the department of Comparative Anatomy, and many of the old specimens have been prepared and mounted. Special attention has been given to procure a series of skeletons of our native Reptiles and Birds. Several valuable *Paleontological* specimens have been received from Messrs. Mudge, Prescott, Bourse and Oliver.

The *Mineralogical* collection has been somewhat increased by donations from 15 persons. But the department is still deficient in many respects and the curator would urge upon the members the importance of collecting good specimens of our native minerals.

Eleven donations have been made to the *Herbarium*.

All the Curators unite in requesting members and friends to collect and send to the Institute such specimens as they may be able to obtain, those, that are the most common, are needed, not only for the purpose of completing our own collection, but also for exchanges. A special appeal is made for specimens relating to the different branches of the Natu-

ral History, of our county. The halls of the Institute should contain a complete series of Natural objects of Essex County.

**TO THE HISTORICAL DEPARTMENT.** The curators express their pleasure at the continually increasing interest manifested by the members and friends, in contributing many articles of historical value—such as manuscripts, portraits, old articles of dress or furniture, and various things tending to illustrate the habits, dress and customs of bye-gone times; for them we are indebted to 37 contributors.

The following officers were elected for the year and until others shall be chosen in their stead, viz :

*President*—DANIEL A. WHITE.

*Vice Presidents*—John L. Russell, John C. Lee, H. M. Brooks.

*Secretary and Treasurer*—Henry Wheatland.

*Librarian*—John H. Stone.

*Cabinet-Keeper*—Caleb Cooke.

*Finance Committee*—John C. Lee, R. S. Rogers, E. Emerton, George D. Phippen, Henry M. Brooks.

*Publication Committee*—John L. Russell, Henry Wheatland, George D. Phippen, Ira J. Patch, John H. Stone, George M. Whipple.

*Library Committee*—Daniel A. White, David Roberts, S. P. Fowler.

*Curators of Natural History*—In Botany—John L. Russell; Mammalogy—F. Winsor; Ornithology—F. W. Putnam; Herpetology and Ichthyology—R. H. Wheatland;

Articulata and Radiata — C. Cooke; Mollusca and Paleontology — H. F. King; Comparative Anatomy — Henry Wheatland; Geology — H. F. Shepard; Mineralogy — B. F. Mudge.

*Curators of History* — Ethnology — Wm. S. Messervy, M. A. Stickney, F. H. Lee; Manuscripts — Henry M. Brooks, Ira Patch, L. R. Stone, G. L. Streeter, S. B. Buttrick; Fine Arts — F. Peabody, J. G. Waters, A. Stone.

*Curators of Horticulture* — Fruits and Vegetables — James Upton, John M. Ives, J. F. Allen, R. S. Rogers, Geo. B. Loring, C. F. Putnam; Flowers — J. C. Lee, F. Putnam, W. Mack; Gardens — J. L. Russell, J. S. Cabot, J. Bertram, B. A. West.

A Committee was appointed consisting of Messrs. B. F. Mudge of Lynn, S. P. Fowler of Danvers, John M. Ives of Salem, Benj. C. Putnam of Wenham, R. H. Wheatland of Salem, and A. W. Dodge of Hamilton, to arrange for the Field Meetings the coming season.

A committee was also appointed to consider the expediency of having a course of lectures on appropriate subjects, delivered in the course of the next winter, under the direction and for the benefit of the Institute, and, if so, to make the necessary arrangements,—also to arrange for the Evening Meetings the ensuing season. Messrs. J. L. Russell, James Kimball, F. Peabody, G. D. Phippen, and B. F. Mudge were appointed on said Committee.

Voted to adjourn.

*Thursday, June 2, 1859.*

**FIELD MEETING AT WENHAM.**—The series of Field Meetings for this year were well commenced by a visit to this pleasant town, the scenes of the labors of so many gifted men in former years, and so much a favorite region with lovers of nature at the present day. Not only have the names of Hugh Peters and William Oakes made the woods and lakes of Wenham precious in colonial and scientific history, but those woods and lakes are still the same to day, full of innocent, curious and beautiful things to tempt and gratify the eye and heart of every one who is disposed to commune with nature in her truest moods, apart from the marring disguises of artificial life. Some of the party took an early train, and spent the morning hours in collecting specimens to furnish themes for the afternoon discussions; while others less diligent or more occupied, arrived in the noon train so as to take part in the later exercises of the day.

At 3 o'clock, P.M., the meeting was called to order by Vice President John L. Russell. The Records having been read, donations received since the annual meeting (11th ult.) were announced as follows:—

*To the Library*—From Ralph P. Lowe, Governor of Iowa; George F. Read; Jacob Hood; Miss Anna M. Low; George F. Chever; Joseph Cloutman; Philadelphia Academy of Natural Science; Georgia Historical Society; Boston Board of Trade; M. A. Stickney; New Jersey Historical Society; Henry F. Shepard; Allen Jacobs, of Danvers; Henry Osgood Stone; J. Linton Waters, of Chicago; Chicago Historical Society; Canadian Institute at Toronto; Stephen H. Phillips; Joseph Osgood.

*To the Cabinets*—From E. K. Benson; H. F. Shepard;  
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George F. Read ; S. V. Shreve ; Boston Society of Natural History (in exchange) ; S. Carlin ; Charles H. Fabens ; J. H. Mellichamp, of South Carolina ; J. L. Norfolk ; T. Trask ; R. H. Wheatland ; F. Winsor ; C. Cooke ; Miss Eliza Low ; Mrs. N. D. Cole ; James Lucas, of Manchester.

Letters were read from Massachusetts Historical Society ; Trustees of Boston Public Library ; Corporation of Harvard College ; New England Historic Genealogical Society ; W. B. Trask, of Boston ; J. Linton Waters, of Chicago, Ill ; Stephen H. Phillips ; and B. F. Morrison, of Nantucket.

The Chairman then proceeded to make some general remarks upon the character of these meetings, the objects of the Institute, &c. He also alluded to the importance of a more intimate knowledge of the things around and about us. Some people pass their whole lives without knowing the names of the common plants that lie as it were continually under their feet. These plants are called weeds and that to them is enough—so it is with most if not all of the almost infinite variety of animals, and even of the rocks and stones which abound so profusely in many portions of our county. This led him to notice the importance of the study of these subjects in our schools and to observe that at least some general ideas of them should be obtained that will lead to a more intimate knowledge of them after the period of school life has terminated. He then explained some of the flowers collected during the ramble in the forenoon—among which he noticed the *Arethusa bulbosa* ; *Clintonia borealis*, formerly known as *Dracæna*—an Alpine plant—not common in this region ; the *Mitchella repens*, *Calla palustris*, &c.

F. W. Putnam mentioned that among the donations announced was a fine specimen of the American *Platismian*, taken a few weeks since near Lily pond in Manchester, by Mr. James Lucas of that place, and by him presented to

the Institute. It is a rare bird to be found in this vicinity, and is peculiar to Melville Island and the higher northern latitudes. He closed by proposing a vote of thanks to Mr. Lucas for this addition to the Cabinet.

Benjamin F. Mudge, of Lynn, being called upon stated that Wenham is not very rich in its mineralogy, or very interesting in its geology, except perhaps, in the extensive peat meadows which here abound, and which are considered as the incipient stages of the coal formations; also, in the peculiar pits, or devil's dens as they are commonly called, which are supposed to be formed by the action of Icebergs, according to the suppositions of Agassiz, Lyell, &c. Some general remarks upon these subjects were made, and Mr. Mudge then exhibited some fossils, specimens of trilobites, found near Quincy in this State.

R. H. Wheatland mentioned that in Miles River, in this place, a new species of Bream is found in considerable abundance—known by a long black appendage to the gill covers,—and informed the good people of Wenham, if they should take any specimens of this fish, that some of them would be very acceptable to the Institute. He then mentioned that among the donations recently received was a fine collection of turtles, toads, frogs and lizzards, from South Carolina, presented by Dr. J. H. Mellichamp—also, from Capt. C. H. Fabens, two living specimens of the *Tesudo tabulata*, from Cayenne, S.A., one of which was of very large size and said to be of great age. He proposed votes of thanks to Dr. Mellichamp and Capt. Fabens for their valuable donations.

Samuel P. Fowler, of Danversport, spoke of the gratifying fact, that since the birds had been permitted to be unmolested by the boys, several of our birds had become quite domesticated. He mentioned that the Maryland Yellow-

throat has built in his grounds for two or three years. The wood Pewee, usually found in the woods, and the Purple Finch, follow the evergreens that are now planted in our grounds. The Crow Black-bird, usually very shy, has come into our gardens and built its nests on some tall pine trees within a rod of a dwelling-house. Mr. F. thinks the Crow Black-bird may become domesticated as the Rook is in England.

John M. Ives corroborated the remarks of Mr. F. upon the domestication of our birds, and mentioned that there was quite a colony of Crow Black-birds upon the grounds of Mr. Lee, in North Salem. He observed that the most interesting subject of study in Ornithology is the migration of birds, which led to some interesting remarks from Messrs. Fowler, Ives and the Chairman, in the course of which allusion was made to the hybernating of the swallow in the mud.

F. W. Putnam alluded to the Frozen Wells at Brandon, Vt., and mentioned that this subject had been brought up at a recent meeting of the Boston Society of Natural History, and that a committee had been appointed to investigate in relation thereto, and to report. Some discussion followed on this subject in which Messrs. Putnam and Mudge participated.

After passing a vote of thanks to Mr. B. C. Putnam and other citizens of Wenham, for their kind attentions, and to the town authorities for the use of the Hall, and the transaction of some business matters, the Institute adjourned.

*Wednesday, June 15, 1859.*

**FIELD MEETING AT MIDDLETON.**—This pleasant and hospitable, though very secluded and thoroughly country-like



place formed the locality of a highly agreeable meeting of the Institute this day. As usual, a small, but perhaps more industrious party made their way to the vicinity by an early train over the Essex Railroad, and appropriated the first and coolest part of the day to the somewhat active researches; but the most of the company were set down from the train about noon in what seems to a stranger to be a mere nook cut out in the middle of the forest with hardly a building in sight to attest the neighborhood of any town or settlement whatever. A short walk, though a very warm one, corrected this idea by introducing the party to the "village green" of Middleton, for so many years an adjunct, like so many of its class in New-England, of the village tavern; in this case known as "Batchelder's." "Batchelder's Tavern" however, after having been for an indefinite period the favorite caravansera of every drover or teamster who plied his weary calling between Salem and New-Hampshire, has lapsed from its earlier dignity, and only figures now as a plain, substantial, and orderly looking residence.

Passing across the green, the theatre, no doubt, of many a village exploit that made the actors famous in their time, but which is now only a convenient spot from which to study the signs of several shoe manufactories and country stores, the attention of some rested on a fine old ruin of a grist mill, another village institution of other days, but like all the rest, modified and outworn by the joint pressure of time and progress. Very few more picturesque old mill-ruins than this are to be found in New-England. The little stream that used to turn its now decaying wheel still wanders cheerfully down from the disused dam above and to-day afforded "good picking" of botanical and animated varieties to the ramblers of the Institute, along its borders.

By traveling a short distance, apparently straight into the woods, the party reached the banks of Middleton Pond, a beautiful sheet of placid water, enclosed on nearly every

side by thick forest, which, at the point approached, had been improved into a pleasant grove.

According to the diverse promptings of taste, the members scattered from this point in quest of further curiosities, and having completed their explorations, assembled in the Town Hall at 3 o'clock, P.M., for the afternoon meeting. The record of the previous meeting having been read, donations to the Cabinet and Library were announced as follows:—

*To the Library*—From J. L. Russell; Historical Society of South Carolina; Henry F. King; American Antiquarian Society; Chicago Historical Society; Charles Stearns of Springfield; Massachusetts Historical Society; J. W. Thompson; Boston Society of Natural History.

*To the Cabinets*—From John S. Ives; John M. Ives; Brown E. Shaw; R. H. Wheatland; Caleb Cooke.

Letters were read from Charles Stearns of Springfield; S. P. Fowler of Danvers; Daniel E. Graves of Middleton; George Livermore of Cambridge.

The Chair, in some opening remarks, alluded to the intense heat of the time when the Institute had come to hold this, its first Field Meeting in the worthy town of Middleton. True it was that this Society was located in one of the cities of Essex County and with an extensive library and cabinets, required an expenditure of time, means and labor for its support; but no country town, village, or hamlet, was too insignificant to be worthy of the attention of the Essex Institute. Its aim was to gain and impart information at the same time—to gain a knowledge of all the productions, natural phenomena and historical facts belonging to the county, and, in turn, to assist our fellow citizens to many items of interesting and important information that

could hardly fail to be of great and lasting use to some, if not to all.

Every township has its own special style of productions and facts; and the earnest desire of the Institute is to possess itself of all these things in detail for the general benefit. A humble inhabitant of a quiet town like Middleton may think the common things about his field of no consequence to anybody, but not so; they may be the choice *desiderata*—the missing links—in a chain of important but uncompleted evidence, and the very things most desired by the earnest student. Let every one preserve such specimens as come in his way and give the Institute the benefit and use of them. Let every great man and every little man feel himself as the fully authorized and accredited agent of the Institute for the collection of all Nature's treasures, and sure of their sincere gratitude for every contribution of the kind, however trifling it might appear.

Dr. R. H. Wheatland made some remarks on a number of specimens of rare fishes collected by him, some of which belonged to the family of the Etheostomoids. He also spoke at some length on the habits and characters of this family, lately investigated by Agassiz. He further alluded to the two species of Pickerel found among us; also to a specimen of the Wood Tortoise (*Emys insculpta*) taken during the day and seeming to be one of the rarest in this region. He took further occasion to enforce the request of the Chair for specimens of all our native animals, and added some directions as to their preservation.

C. M. Tracy of Lynn, occupied a short time in observations on the botanical specimens gathered during the excursion. A few of the rarest were as follows:

The Houndstongue or Tory Weed—*Cynoglossum officinale*, found near the old Mill-site.

Water Lobelia—*Lobelia Dortmanna*, from the upper end of the pond.

Veiny-Leaved Hawkweed—*Hieracium Venosum*.

Wild Sarsaparilla—*Aralia nudicaulis*.

Spotted Wintergreen—*Chimaphila maculata*.

Rock Rose—*Helianthemum Canadense*.

Indian Cucumber—*Medeola Virginica*.

All from the woods on the southern side of the pond. Some of these plants are quite noticeable. The Tory Weed is so called from the tradition that it appeared in Vermont about the time of Burgoyne's invasion, and as its bur-like seeds are a thorough pest to the wool-growers, they have always held that the tories sowed them to curse the country ever afterward. The plant belongs to the same family as the Borrage and Comfrey. Many might suspect it of poisonous properties, from its dull, dark colors and heavy odor; but is believed to be wholly innocent. In fact, a large share of the popular fear of poisonous plants is altogether groundless, such being comparatively very rare within our flora.

The Spotted Wintergreen, which is a close relation of the well known Prince's Pine, is quite rare in these parts. A few sprigs of it are occasionally met with, but no great quantity anywhere. Both species have very pretty and curious flowers, but close watching is necessary to observe them, since their duration is very limited. As to the others, the Indian Cucumber has this name from the flavor of its fleshy root, and not from any affinity with ordinary cucumber; and the wild Sarsaparilla belongs in the neighborhood of the Parsnip and other Umbelliferæ, and is therefore entirely distinct from the Sarsaparilla of the shops, which is a species of *Smilax* or Greenbrier.

No feature of our meetings, (said Mr. T.) is more pleasant than their tendency to encourage the young and obscure student in the prosecution of scientific research. He himself would hardly have kept up his determination for such

purposes, had not the older and more experienced heads and hands of the Institute lent him timely countenance and support on previous occasions. Let us, then, always keep watch for any earnest but perhaps half discouraged student of nature who may come in our way, and never stint the kind word or the approving look, or timely explanation that may, perhaps, prove the golden clue by which he may lead himself up to ultimate reputation and success.

The Chair followed the remarks of Mr. Tracy with some statements as to the usefulness of the small local associations now and then found in the community and devoted to the pursuit of the natural sciences, instancing the Exploring Circle in Lynn and a Botanical Class in Danvers, as affording good examples of this species of effort. He also spoke of a small work on the botany of the County lately published by Mr. Tracy as a convenient assistant in such studies, particularly in the vicinity of Lynn and the other southerly towns of Essex County, for which it is particularly adapted.

B. F. Mudge of Lynn offered some remarks on the geological matters brought to light during the day. Middleton (said he,) is not a locality of special richness in geological or mineralogical things, yet here, as everywhere, there is something which the mind of the geologist may grasp in its broad compass, as tending to illustrate the general truths of this sublime science. The drift formation, that ever-abiding riddle of students is well exemplified here in the tall hill over which the party labored to-day in the hot sun for the fine view obtained from its top, and in the valley behind it which holds the calm waters of Middleton Pond. The rock hereabout is various in character. A specimen of true micaceous granite had been handed in to day, very different from the ordinary sienite used in building and known as granite; and probably the whole of the township rests on several kinds of rock much intermingled, as in other cases within

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the peculiar region of the drift. Mr. M. further commented on a quantity of interesting fossil shells lately received from Mr. B. E. Shaw of California. They were collected partly in San Francisco and partly in places south of that city.

S. P. Fowler of Danvers mentioned that a nest of the Swamp Sparrow, with eggs had been found in the woods south of the pond during the ramble of the morning. Also that he had found, at the westerly end of the pond one or two good specimens of what the Indians call "Wassun Stones." These have been described and largely illustrated by Schoolcraft in his works on the Indians. They consist of boulders, which, from containing veins and spots of softer and harder texture, become abraded in time by the air and water the hard parts being left in very grotesque forms, leading the savages to regard them as natural images or idols. They therefore set them up in the forests and sometimes bestow offerings of tobacco upon them.

Mr. Mudge added that Hitchcock also alludes to the same thing under another name.

Rev. Mr. Johnson of Middleton, made a brief address, expressive of his satisfaction in the proceedings of the day, and his earnest hope in behalf of the people of the town as well as himself, that the Institute might select Middleton for another such occasion at no very distant day.

Dr. Phelps of Middleton coincided in the above views, fully agreeing that the prosecution of such meetings could not fail to prove eminently useful to all.

On motion the thanks of the Institute were voted to Messrs. Esty, Graves, Stiles, and other citizens of Middleton for their kind attentions during the day, and to the Selectmen for the use of the Town Hall for the Meeting, after which the Institute adjourned.

*Thursday, July 7, 1859.*

**FIELD MEETING AT SAUGUS.**—Favored by a day of especially good promise, a company of more than a hundred members and others, alighted from the train at 10 A.M., at Saugus Center, a place combining very many attractions for an occasion such as this. Two parties were immediately formed; one of which, headed by B. F. Mudge Esq. of Lynn and accompanied by Mr. Wilbur F. Newhall of Saugus as guide, took a direction toward the south and west and visited the undulating lands and pleasant heights around the village of Cliftondale. Making an ample circuit among these, they at length emerged from the woods and found the easterly limit of their ramble at the "Jasper Rock" near the river; from which they returned to the rendezvous at the Town Hall. The other party, led by C. M. Tracy Esq. of Lynn, with the assistance of Mr. Joshua Howard of Saugus, adopted an opposite course and sauntered along the river side, now in the fields and now on the highway, visiting the "Cinder Banks," the woolen mills of Messrs. Scott and Pranker, and such other objects as seemed worthy of note, till they crossed the river and took the quiet and shady path along the eastern side. With an occasional pause for rest and enjoyment they at length arrived near the house of Mr. Thomas Bayley, who learning the import and meaning of the appearance of so large a company on his premises, expressed much interest in their objects and presented the explorers with a number of Indian relics, as arrow-heads and the like, dug up on the spot where they then stood. Doubtless, in former years the estuary of Saugus River formed a favorite resort for the red men as affording a productive fishing ground, to say nothing of the natural beauties of the place which time has not yet destroyed, though little has probably happened to improve them. Here the strollers abandoned the river side, and by a path of sufficient rudeness, every way considered, finally reached the well known gorge known as "Pi-

rates' Glen." A halt was made here; for the members were both tired enough and scattered enough to render this advisable; and here, in the deep shade of the heavy trees of the Glen, the old mythical tradition of the Pirates was recounted and discussed anew. Evidences of a lingering faith on the part of some one were not wanting, for besides the circular pit at the lower end of the ravine which passes for the "Pirates' Well," more recent excavations showed that efforts to search out the buried treasure had not been wholly relinquished.

Pursuing their way, the explorers gained the ancient road whose remaining portions now serve only for the communications of Mr. Howard and his immediate connections with the town below. This road, however, appears to have been, in early times, the chief seat of civilization hereabout. Many relics of former dwellings are discoverable along the track it traverses, and but a few steps to the west, lie the half obscured earthworks that once served to defend the village "Garrison House" from the attack of the savages. By continuing on this and the other, or cross-road leading back to the bridge, the party rejoined their companions at the town Hall.

The afternoon meeting being called to order, the President and Vice Presidents being absent, B. F. Mudge of Lynn, was called to the Chair. After some appropriate introductory remarks from him, the record of the last meeting was read, and donations were announced as follows:—

*To the Library*—From Edwin Harrison of Saint Louis, Missouri; Philadelphia Academy of Natural Science; Chicago Historical Society; Nathaniel Paine of Worcester; John F. Webb; Miss H. Becket; Wm. A. Osborne; George F. Read; D. A. White; A. G. Browne; Elliott Society of Natural History, Charleston, S.C.; Jonathan Perley, Jr.



*To the Cabinets*—From Joseph True; Peter Conning; Wm. Welch; W. A. Phillips; Henry M. Brooks; Wm. Prescott; Charles Endicott; Ripley Ropes; H. F. Shepard; Charles H. Buxton; James Bartlett; R. H. Wheatland; C. Cooke; J. L. Russell; Miss M. G. Wheatland; C. H. Putnam; S. P. Pond; Joseph Osgood; C. H. Price, J. A. Manning; George Pettingill; B. F. Mudge; George Upton; William Mack; C. K. Stevens of Lawrence; Thomas Bayley.

Letters were announced from B. F. Mudge of Lynn, N. Vickery of Lynn; John L. Russell; Edwin Harrison of Saint Louis, Missouri; Edwin Van Cortlandt of Ottawa, Canada West; E. B. Willson; Connecticut Historical Society.

C. M. Tracy of Lynn took occasion to speak for a few moments on the numerous objects of historical interest visited by the Institute in the rambles of to-day. The life of the early settlers is yet prolonged in a pleasing form in the large number of interesting trees and plants still lingering in these fields and woods, the relics of their ancient cultivation. Not far from the cross-road leading east from Pranker's Mill the English Hawthorn, *Crataegus oxyacantha*, grows perfectly wild in the thickets, though considered by our best botanists as nowise indigenous. The like is true of the English walnut, (*Juglans regia*) of which two magnificent trees are waving their spray within sight of the Hall windows. Many specimens of the White Dead Nettle (*Lamium rugosum*, var, ?) had been gathered to day very near the "Cinder Banks" (which are admitted to be the refuse slag and scoræ from the old Iron works) and whether this plant, otherwise only known in the garden, be a remnant of the civilization of that older day,—or whether more recently established where it now grows so wildly and freely are questions of much interest. As to the floral collections of the day he would instance, besides the above, those which follow:

Boxberry—*Mitchella repens*.  
 Red Milkwort—*Polygala sanguinea*.  
 Wild Pink—*Dianthus armeria*.  
 Wood wax—*Gcnista tinctoria*.  
 Bayberry—*Myrica cerifera*.  
 Swamp Pink—*Azalea viscosa*.  
 Canker Lettuce—*Pyrola rotundifolia*.  
 Willow Herb—*Epilobium angustifolium*.  
 Green Pyrola—*Pyrola asarifolia*.

From other parts of the county he had the

Clustered Blue bell,—*Campanula glomerata*, from Topsfield ; the

Zigzag Clover, *Trifolium medium* from Danvers ; and the Lopseed,—*Phryma leptostachya*, from the same town, near the crossing of the Andover and Newburyport Turnpikes.

He also showed a curious monstrosity in the white clover where the pedicels of the flowers were so much lengthened as to produce a true umbel, almost as large as that of an *Aralia*.

R. H. Wheatland of Salem spoke upon the Zoology of this region, but had not been fortunate enough to secure any notable specimens during the day. The day before, he had unexpectedly found in Wenham, a species of Minnow or Tomcod, not before known in that locality. He had been interested, this season in observing the habits of the Tailor Bee. Though the observations had been tinctured with much displeasure, as the insect had been specially busy in destroying the flowers of his grape vines. This predacious habit was likely to make it a great pest, should it become numerous : and some means may yet be needed to prevent its destructiveness. He had examined its nest, and noted the curious mode in which the insects construct them. These are little burrows or chambers in

the earth, somewhat egg-form and tolerably spacious, but with a very narrow opening, just large enough, in fact, to admit the body of the bee. These chambers are very nicely lined with pieces of leaves, petals, or the like, which it cuts beforehand to the exact shape wanted and then carries in to the hole, adopting the singular method, for this purpose, of wrapping the leaf round its body like a coat and thus taking its load along with no injury to the entrance or in fact needing any opening much larger than for its bare body. The pieces and bits of leaf are fitted to the interior with the utmost precision, joining each other like the parts of a garment, whence the name of Tailor Bee. It has only been known in this country for a short time, though very familiar to Europeans. His first notice of it was on the 19th of June last.

The Chair proceeded with some observations, on the geological feature of the place as developed during this day's excursion. 'This spot is just on the edge of the great porphyry formation; which forms almost the exclusive shore rock between Swampscott and Chelsea, and extends back inland rather more than half the depth of the township of Lynn. In its length and breadth, it exhibits great diversity of color, texture and hardness, some specimens being very coarse and full of seams while others, as at the residence of the "Lynn Hermit," George Grey, show a soundness and fineness of grain, as well as a beauty of marking and color, that makes them compare favorably with the porphyry of antique sculpture. Other specimens are very elegantly banded and striped, much after the style of ribbon and fortification agates. Many specimens upon the table were used in illustration of these statements.

About a half a mile east of the Center Depot, and not far from the elevation called Round Hill, is a small projecting rock, formerly much larger, which has been noticed by Hitchcock in the Survey of Massachusetts, and goes by the

name of "Jasper Ledge." It has a very fine purplish rose color, is exceedingly hard and fine grained and takes a beautiful polish. A few good specimens may yet be found at the Rock one of which was exhibited.

Stephen D. Poole, of Lynn, remarked that there was ground for very much doubt whether this rock had any title to be called a true Jasper. He believed it to be only a very hard and beautiful variety of Compact Feldspar. Genuine Jasper was a silicious mineral, and considered wholly infusible at least when heated alone; but in numerous blowpipe experiments with this mineral, he had always succeeded in rounding and partially fusing the edges of the specimen.

The discussion of this point was somewhat further extended by Messrs. C. M. Tracy of Lynn, and Moses G. Farmer of Salem.

J. C. Houghton, of Lynn, said that in this vicinity were many fine examples of the rounded hills, moraines, &c. caused by the vast forces concerned in the drift formation. Not a few of those immense erratic rocks, or boulders, that excite so great and very natural wonder, are located in this vicinity.

"Round Hill" so called, a few rods from this Hall, is an excellent instance of an isolated mound of drift. In all its features and aspects, the drift of Lynn and Saugus is sufficient to engage the constant study of a lifetime with advantage; and he could add nothing at this time but to recommend it to the attention of all those interested in geological research.

Some remarks at this point as to the English Walnut Trees above mentioned led to an animated and pleasant debate on the subject of planting ornamental and shade trees in public places as in streets and school house yards, which

was shared by Messrs. E. P. Robinson and Rev. John H. Campbell of Saugus, and the Chair.

Edward Pranker, Esq, of Saugus, observed that the trees at the "Parker Place" were always called English Walnuts but he considered them something quite different. He had always known the English nut. England being his native country, and, if these were from seed originally brought from there, he thought they must have degenerated, as perhaps most imported things do, Englishmen included.

A large Elm standing a few rods from the Hall, and known as the "Roby Elm," (from one of the earlier clergymen of the place) was the subject of some remarks by Messrs. Campbell and Robinson: in continuance of the same, C. C. Coffin of Malden gave an interesting account of a very large Elm in Malden, which he and his friend, Moses G. Farmer, of Salem, had measured not long since. It bears the name of the "Dexter Elm" and has connected with it many historical associations of great interest. In response to some statements by the Secretary as to the desire of the Institute to obtain old and curious books and pamphlets, Mr Coffin said that the importance of such collections was not generally understood. The historian was often furnished from some such source with the fact or circumstance that had long been the missing link in his chronology, and the world had doubtless reaped signal benefit from the preservation of such things, when very few had dreamed to what they were really indebted. "A last year's almanac" is almost a proverb for a cast off and useless thing; and yet there is hardly any species of book that can be collected with more of real advantage, especially if the series can be made continuous. The Boston Athenæum had so far recognized the value of old pamphlets as to employ special means to collect them. On such a mission, he, not long ago, pene-

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trated into the upper towns of New Hampshire, and discovered many such things, which, when brought together in a form to be accessible to inquirers, will undoubtedly afford enough of interest to fully repay the trouble of searching them out.

Geo. D. Phippen of Salem, stated as a historical item of curious interest, that tradition has long held that the first meeting house in Salem was not pulled down after its ceasing to be used in that capacity, but was removed, about 1639, to some spot near the road to South Danvers, and employed for other purposes for sometime afterward. Recently, it has been asserted that the old building, or its frame, yet exists; that it stands on the land of Mr. David Nichols, at the foot of Gallows Hill, and is the same structure that did service for some years under the name of Tompkin's Inn. It seems desirable that the correctness of these statements be tested, and that the Institute should take action on the case for that purpose, particularly as Mr. Nichols had tendered the building to the society for their disposal. He moved that a committee be raised to inquire into the facts of the case and to report what action the Institute ought to take in reference thereto.

The motion of Mr. Phippen was adopted, and Messrs. C. M. Endicott, D. A. White, F. Peabody, S. M. Worcester, and George D. Phippen were appointed on said Committee.

C. M. Tracy introduced the following, which was unanimously adopted :—

Resolved, that the thanks of the Essex Institute be presented to the Selectmen of Saugus for their kindness in permitting us the use of the Town Hall on this occasion; also to the Abanselt Division of the Sons of Temperance for the use of their room; to Messrs. Benjamin F. Newhall and Richard Mansfield for their friendly interest and attention; to Messrs.

Wilbur F. Newhall and Joshua Howard for their services as guides to the several parties; and to the citizens of Saugus for their friendly feelings so freely manifested at this time.

The meeting then adjourned.

*Thursday, August 11, 1859.*

FIELD MEETING AT NORTH ANDOVER.—Some one hundred and fifty persons attended this meeting, mostly from Salem and vicinity. A part of these, including the more active spirits of Natural History employed the early train over the Essex Railroad, but the greater number were not landed at the "Marble Ridge" Station till about noon, and a walk of considerable length being still necessary to reach the village itself, all excursions were postponed till after refreshments had been served. This minor, but yet important adjunct to the field meetings was enjoyed in the hall of the Engine Company of the place, whose favors to the excursionists were cause for much gratitude. Subsequently a series of short rambles were made in various directions, with much of profit and satisfaction to those engaged.

North Andover was separated from Andover and incorporated as a distinct town in 1855. The present population is about one third of that of the original town; or some 2300. It was formerly known as the "North Parish," and within its borders lived the Johnsons, the Osgoods, Farnhams and Stevenses, with many more of those old families whose wealth and influence brought them great respect in their time. Rev. Bailey Loring, for many years the minister of the First Church, which was founded in 1645 still lives here. Thomas Barnard, settled in 1682, was the third minister, and the fourth was his son John, settled 1719. Rev. Edward Barnard, of Haverhill, was a son of John, and his portrait hangs in Plummer Hall, the gift of the family of his grandson the late Capt. E. Barnard of Salem. Another

son of John, Rev. Thomas Barnard, was first of Newbury, and afterwards pastor of the First Church in Salem from 1755 to 1776, and his son was Rev. Dr. Thomas Barnard the first minister of the North Church, Salem, who died in 1814 after a faithful ministry of forty-two years, and is still remembered with affectionate reverence and esteem by many in this community.

This town is not without many existing memorials of these and other departed worthies. The old mansion of the late Hon. Wm. Johnson is near the railroad Station. A genuine nobleman and son of a revolutionary pensioner, his honesty and intelligence were often called into activity for the good of his fellow-citizens in his time. Both he and his brother James, a wealthy Boston Merchant, have deceased within a few years, and now lie in the village Cemetery. Here is also the Farnham estate with its noble old trees, and near by, the Stevens' homestead, the birthplace of Isaac I. Stevens, Governor and Delegate in Congress of Washington Territory. Modern improvements abound also, in the form of mansions bearing every mark of wealth and taste, and prosperous manufactories, claiming service of the neighboring waters, before they go to swell the current of the stately Merrimac.

One of the exploring parties under the lead of Vice President Russell, availed themselves of land carriage to reach the interesting point known as the "Devil's Den" or "Den Rock," where they spent a while in pleasant examination of the rock itself, geologically speaking, the configuration of its curious recesses, and the vegetation upon and around it. Another party crossed the Cochickewick Brook, or River, which forms the outlet of the "Great Pond" and pursued the line of the southwestern shore for some distance, making many interesting observations. Still another division, and a numerous one, improved the opportunity offered by Mr. Samuel B. Pierce of this town, to make a series of pleasant trips hither and thither over the waters of the "Great Pond,"



in a miniature steam boat called the "Traveller." His boat is capable of carrying from twelve to twenty persons, and has an engine of about two horse power. This sheet of water is very aptly entitled the "Great Pond." It is certainly the largest sheet of fresh water in Essex County and thought to be nearly or quite the largest in the state, after the great Assawamset and connected lakes in the southern part. Something of its present magnitude may be due to flowage for mill purposes, but there is little about it that speaks of a mill-pond, and it is every way a fine, well-bordered sheet of beautiful water. It is said to be navigable for five or six miles. It may be so, as it has, a total length of about three miles in the center and covers not far from 720 acres.

The various detachments having all come in ; the afternoon meeting was called to order at about 3 P.M., in the vestry of the Unitarian Church, (Rev. Mr. Vinal's), by Vice President Russell who proceeded with a few remarks, calculated to afford the good people of the town some proper idea of the objects of the Institute in making this visit to their borders.

The Record of the last meeting being read, donations were announced, as follows :

*To the Library*—From the Congregational Library Association ; Boston Society of Natural History ; George R. Curwen ; Ira J. Patch ; Smithsonian Institution ; Executive Committee of the American Anti-Slavery Society ; Massachusetts Secretary of State ; William Brown ; American Academy of Arts and Sciences ; American Geographical and Statistical Society ; Philadelphia Academy of Natural Science ; Francis Brinley of Boston ; Trustees of New York State Library ; James S. Bryant of Hartford ; Henry W. Cushman of Bernardston ; William Fabens of Marblehead ;

Department of the Interior, Washington, D.C. ; William R. L. Ward, of New York.

*To the Cabinets*—from Eliot F. Smith of Keokuk, Iowa ; B. Stone ; B. F. Mudge of Lynn ; S. M. Newhall of Saugus ; B. W. Stone ; John N. Martin ; H. J. Pratt ; H. F. King ; Stephen Cloutman ; John M. Ives ; Charles A. Putnam ; Miss Martha G. Wheatland ; Richard H. Wheatland ; C. Cooke ; James B. Boswell ; Miss H. P. French ; Robert W. Bemis of Chicopee ; Miss E. Gardner ; James Oliver of Lynn ; S. Tucker ; Charles H. Price.

Letters were read from the following :— Department of the Interior, Washington ; Massachusetts Historical Society ; New-England Historic Genealogical Society ; American Antiquarian Society ; Peabody Institute, South Danvers ; Trustees of Public Library, Newburyport ; Trustees of Public Library, Boston ; Maine Historical Society ; Connecticut Historical Society ; Trustees of New York State Library ; William Brown ; William Prescott of Concord, N.H. ; Abbott Walker ; B. W. Stone.

The Chair gave some account of his visit with others, to the " Den " before mentioned. He stated that a few Cryptogamous plants were found there, and gave some statements in regard to them. He also found the Bushy Seed-box (*Ludwigia alternifolia*) by the roadside on his way.

B. F. Mudge of Lynn, in default of any geological observations of value, had collected a variety of specimens of our common fresh water clam or mussel (*Unio complanatus*), on which he gave a brief discourse. This is the shell which, in rare cases affords that highly prized thing, a real pearl. This production is not a natural regular result of the growth and habit of the creature, but something irregular a mere excrescence, or secretion of calcareous matter due to some accidental cause, within the shell, or in the tissues of the

animal's body. When a genuine pearl is found, it is almost beyond price ; but the accidental discovery of such a one in New Jersey, not long since, led to an excitement through the country on the subject, that was alike senseless and unprofitable. To nearly all the infatuated seekers, the pearls proved both priceless and worthless, as any prudent person might have expected ; for in none of our New England species do pearls occur that have any value, unless very rarely indeed.

Mr. M. said that some specimens of corals had been handed him said to have been found within this town. Probably these are not at all "in place."

The Chair sustained the last remark, stating that in the earlier times the lime used in New England was not obtained, as at present, from the calcination of limestone, or, at all events, a very large share was produced from the burning of corals and shells, great quantities of which were brought from the West Indies, &c., for the purpose. In Salem, for example, the locations of several lime kilns, are yet pointed out and considerable fragments of corals are now and then turned up from the earth near them, the remnants of the heaps that once supplied the business.

Samuel P. Fowler of Danvers made a series of interesting remarks on the behavior of our native plants under cultivation. He illustrated his statements with specimens of such grown in his own garden, and affording in almost every case ; better flowers and more luxuriant foliage than in their wild situations. Among them were instanced the Cardinal Flower (*Lobelia cardinalis*) the Pleurisy Root (*Asclepias tuberosa*) the Swamp Rose Mallow (*Hibiscus Moscheutos*) and many others.

Mr. F. alluded to the fact that there were several species of fishes which, though not recognized as inhabitants of our coast two or three years since, have become somewhat

common now. The Skip Jack (*Temnodon saltator*) was one of these new-comers. He wished that the meeting might have the benefit of a few words from Wilson Flagg Esq., now present, who could speak to questions that would interest all.

Mr. Flagg however declined speaking though further invited in some complimentary remarks by the chair.

R. H. Wheatland of Salem, followed out the considerations of Mr. Fowler as to new fishes on our coast, and proceeded to discuss, in part, the causes of such a phenomenon. He also urged the more general collection of our fishes and reptiles, stating that he had to day met with very good success in this department, but a vast work remained to be done before we could become well acquainted with all our own natural productions.

George D. Phippen of Salem, after speaking of several plants noticed during the day's excursion, adverted to the Dodder (*Cuscuta Gronovii*) as an object of artificial cultivation. He had given much attention to this plant, and with every success. The ripe seed is easy to obtain, and, being planted in pots of soft earth, soon germinates, throwing up the shoot to the height of an inch or two, perfectly unbranched and leafless. It closely resembles a bit of raw silk, or that other "silk" from an ear of green corn. If no other plant is near on which it can fasten its extremity, it soon withers and dies; but if it finds such a resting place, it attaches itself at once, lengthening and branching rapidly, soon acquiring its characteristic orange color, and in due time, its close branches of pretty white flowers. By thus proceeding, training it on some succulent, juicy plant, like a *Fuchsia* or *Geranium* for example, he had raised specimens of very large and luxuriant proportions, with a wreath of flowers and golden branches that was very attractive. It was a plant

every way adapted for parlor culture ; and treated in this way gave very little trouble and might afford, like all the pursuits of Botany, much of pure satisfaction and delight.

Dr. George Osgood of Danvers said that he had been searching the woods and fields to day, as was his wont, and had collected many things of interest to himself. But of these he would not speak in detail. These woods and fields had another kind of interest for him. Among them he spent the precious hours of his childhood and these rural haunts of North Andover were to him all that is bound up in the thought of one's youthful home. True he was not actually born here, but his ancestors had always resided here, and he himself likewise from a very early date till he left to establish himself in his profession, fifty or sixty years since. But a small share of those, that were then here in active life, are now remaining. Many of these former generations seem to come back to his memory, with their many virtues and excellencies, he remembered the old minister, Rev. Mr. Simms, a brother member of his own profession, Dr. Thomas Kittredge, with Lieut. Gov. Phillips, and many others whom he named, now passed away forever from the field of their earthly labors.

C. M. Tracy, of Lynn, went into some examination of the plants collected during the day by himself and others adding a few remarks on the different species. The following were noticed :

Wild Bergamot—*Monarda fistulosa*.

Enchanter's Nightshade—*Circæa Lutetiana*.

Narrow leaved Loostripe—*Lysimachia lanceolata*.

Blue Vervain—*Verbena hastata*.

Ground Nut—*Apios tuberosa*.

White Alder—*Clethra alnifolia*.

Red Milkwort—*Polygala sanguinea*.

Large flowered Scullcap—*Scutellaria galericulata*.

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Meadow Mint—*Mentha canadensis*.

Water Persicaria—*Polygonum amphibium*.

Monkey Flower—*Mimulus ringens*.

These were all found in a short walk on the south west shore of the Pond. The *Polygonum* is very conspicuous there, presenting a variety of its multiplied forms and occurring both in and out of the water. In a subsequent walk he had found the Germander (*Teucrium canadense*) growing rankly in some old yards, in a rather peculiar form, with reddish or pinkish flowers.

The Chair observed that we do not suspect the presence of plants in all places where they really are. He had a leaf of the Hawthorn before him, which, to the casual glance, appeared dotted with brown and yellow mould. Few would suppose that this mouldy, scurfy, surface was really a collection of living, growing, independent plants, as beautiful in form and color as they were amazing in minuteness and delicacy. Yet so it was. The admirable power of the microscope reveals a world of living organisms in a drop of water or in the insignificant spot upon the ancient stone or decaying tree. Life is everywhere about us, found no less perfect and wonderful in the minutest form than in those of vast proportions. Some of these delicate things were members of the great family of Lichens, others belonged to the Fungi. Each had its peculiar style of growth, each was perfect in kind and fully fitted to the place nature designed it to occupy.

S. P. Fowler added to the day's acquisitions the discovery of a dwarf species of Birch along the shore of the Pond. He supposed it to be the *Betula pumila* of Linnæus, sometimes known as the Arctic Birch. If he was correct, then this must be about as near the sea shore as it ever approaches, for although it is said to abound in northern regions, he had never seen or heard of it before in this part of the country. Mr. F. also proposed the following which was unanimously adopted :—

*Resolved*, That the thanks of the Essex Institute be tendered to Messrs. James Stevens, Henry J. Stevens, Samuel B. Pierce, and other citizens of North Andover, for their kind attentions to the members of the Institute and their friends during the excursion of this day ;—to the Cochichewick Engine Company for the use of their room ;—and to the proprietors of the Congregational Church for the use of their vestry for this meeting.

After the transaction of some minor business the Institute adjourned.

*Wednesday Sept. 14th, 1859.*

FIELD MEETING IN GROVELAND. By the employment of an extra train on the Essex Railroad and the further use of the Georgetown road after arrival at North Danvers, the members and company generally reached the town of Groveland at a seasonable hour. The morning rendezvous was fixed at what is known as Balch's Grove, a lovely spot on a hill rising from the very bank of the Merrimac. It is owned by Mr. William Balch, who, at the full age of ninety-two, and in possession of unimpaired faculties, lives in the vicinity, enjoying the universal esteem and good will of his townsmen, both old and young. His house, not far from the grove, is said to be not less than one hundred and fifty years of age, and he supposes it to have been a garrison house during the times of Indian troubles.

Groveland was made a distinct town by incorporation in 1850, when it was separated from the present town of Bradford, of which it was formerly the East Parish. [Bradford appears to have been divided into two parishes in 1726, but its incorporation as a town took place in 1673 when it parted from the old original town of Rowley. It had previously been known both as Merrimac and Rowley Village. Groveland is a very pleasant, nay, a beautiful place. Its rolling hills, when resting under the charming, soften-

ing influence of a mild autumnal day, such as delight every one during the Indian Summer, must make a picture of rare attractiveness. But to-day, a different style of weather gave rise to other feelings on the part of the company, for a chilly wind, with excessive clouds of dust tended sensibly to diminish the pleasure that might have been realized from a view of the place under better circumstances.

Several parties set out for excursions from the grove, each pursuing the route that seemed of most favorable promise. One took the road toward Georgetown, having their object in viewing several immense bowlders situated on and near land of Mr. Abel Stickney. This party were also interested in the examination of an ancient house on this road supposed to have been built in 1700, as that date was found marked on the old chimney on occasion of some late repairs.

Another party turned their attention toward the Comb Factories in West Newbury, where some fifty or sixty workmen are constantly employed in the manufacture of combs from vulcanized India Rubber, at the rate of one thousand dozen per day. The factories are owned by S. C. Noyes & Co., and are very successful.

The ancient grave-yard near the grove took up the time of a considerable number, who lingered there to con over the epitaphs of departed worthies and the venerable memorials of those who gave their share of activity to the past. Here it was noted that Martha Hale wife of Samuel Hale, died here in 1723 aged forty-seven. Corporal Joseph Hardy died in 1726 aged eighty-four. Many stones bear the date of 1736. There may be some older than any of these.

The formal meeting was held about 3 P.M. in the Vestry of the Independent Church, Vice President Russell filling the Chair. The Record being read, donations were announced as follows:

*To the Library*—from New Jersey Historical Society; Henry C. Cameron of Princeton, N.J.; Jonathan B. Bright



of Waltham ; Maine Historical Society ; James B. King ; Boston Society of Natural History ; New York Mercantile Library Association ; Philadelphia Academy of Natural Sciences ; John L. Sibley of Harvard College ; David N. Camp of New Britain, Conn. ; J. M. McJilton of Baltimore, Md. ; Miss Lydia Pope ; William Fabens of Marblehead ; E. M. Stone of Providence, R.I. ; George A. Perkins ; Joseph Cloutman ; Nathan Lord of Dartmouth College ; Miss M. J. Howard ; George H. Smith.

*To the Cabinets*—from Henry Bryant of Boston ; Daniel Frye ; Charles A. Putnam ; John Stone ; Charles H. Price ; Miss M. G. Wheatland ; James B. King ; S. P. Fowler of Danvers ; John M. Ives ; Henry Robinson ; B. F. Mudge of Lynn ; Francis B. Jacques ; N. Vickery of Lynn ; O. H. Saunders ; L. Agassiz of Cambridge ; James M. Barnard of Boston ; J. H. Mellichamp of Bluffton, S. C. ; Henry F. Shepard ; Gardner Chandler ; Miss Mary W. Nichols ; John Felt ; Henry M. Brooks ; James M. Chamberlain ; Charles Ward ; Samuel V. Shreve ; W. A. Phillips of Swampscott ; Derby Pickman ; F. W. Putnam ; A. M. Ordway of Boston ; O. C. Marsh of Lockport, N. Y. ; Charles H. Norris ; Joseph Short of Philadelphia ; F. W. Tuttle.

Letters were received from Corporation of Harvard College ; New York Mercantile Library Association ; Trustees of New York State Library ; Iowa State Historical Society ; New England Historic Genealogical Society ; N. Vickery of Lynn ; Samuel Blake of Dorchester ; James Richardson Jr. of Groveland ; Benj. Poole of Topsfield ; C. M. Tracy of Lynn.

The letter from Mr. C. M. Tracy of Lynn was, on behalf of the Exploring Circle of that city, calling the attention of the Institute to a very remarkable boulder discovered by them on Prospect Hill near the line of Lynn and South Danvers, and named Phaeton Rock. He requested that a committee of the Institute be appointed to visit

the place in company with a committee of the Circle and seek to devise some means for the preservation of so remarkable an object as this rock really might claim to be.

On motion of the Secretary, this letter was referred to a Committee consisting of Messrs. C. M. Tracy, B. F. Mudge and Henry F. Shepard, to report at some future meeting.

In introducing the Society to the acquaintance of the people of Groveland, the chair made the somewhat customary exposition of its history and purposes. He had had some knowledge of Groveland in former years, when it was only East Bradford, and he added some reminiscences of that period which naturally connected themselves with to day's proceedings. He said he had been looking for plants to-day but with very indifferent success. At this time we always expect plenty of Asters, but they had proved to be very scarce to day. On the other hand, the Harebell, (*Campanula rotundifolia*) which is hardly known in our southern towns, flourishes here in great abundance. Gentians were freely found, also; both the fringed (*G. crinita*) and the soapwort species (*G. saponaria*) still, no one made complaint of lack of plants for study even if certain species were not found, for others were sure to be plentiful. The heavy bowlders visited to-day by some of the members had enough growing on them, of most wonderful and curious forms and structure, to employ a competent naturalist in close study for ten years. But such as these were of unpretending and modest look, as well as of extreme minuteness, requiring the aid of the microscope for their full explanation and the eye, that only look for obvious and dazzling beauty, is very apt to pass them by in neglect and disregard.

B. F. Mudge of Lynn, presented some statement of the geological observations of the day. He had visited the two large bowlders which had been mentioned by the chair. They would, apparently, weigh from 75 to 100 tons each

and seemed to differ somewhat in their material from most erratics in the southern part of the county. One of them has a very curious position, resting by three narrow parts on two rocks below ; and looks as if it might easily be pried over, though probably that appearance was wholly deceptive. These are a part of the great mass deposited over the face of the country by the northern drift currents of the last great geological age, before the present, or alluvial period. No adequate cause can be assigned for this drift-action, but it is certain that such currents have swept down from the northwest, bearing along great masses of rocks torn from the parent ledges, with smaller stones and gravel from the comminution of the coarser fragments, and piling them in hills, mounds and ridges, here and there, or leaving such vast blocks as then perched on the tops and sides of hills, in almost every kind of situation. This being the general direction, all rocks found in the drift beds of the southern towns in this county, for instance, will appear also in the northern, either in the same form, or as parent ledges, perhaps ; but an erratic rock may be found here, in a northern town, yet nowhere south of here. Hence as we travel northward we shall be likely to find the drift changing by the introduction of new kinds of rock, as it might seem ; but going south, the change would be by extinction, so to speak, varieties ceasing to be found till the whole amount of drift-material would disappear in the southern latitudes. He had understood that some persons had made efforts to find coal in this place, and expended some means for that purpose. He had a specimen of the stratified rock in which their excavations were made, and this said he, is not by any means the kind with which coal is uniformly associated. Had those, who wasted their time and money so foolishly, been blessed with some little geological knowledge they might have been spared the mortification of failure, for they would never have thought of seeking for coal among such rocks as these. The mineralogy of this region is quite in-

teresting, and many good cabinet specimens may be found, of desirable kinds.

R. H. Wheatland of Salem, devoted a short time to a description of sundry very curious and valuable specimens in Zoology lately presented to the cabinets of the Institute. Among these were the ova and embryos of *Cristatella*, received from Capt Chs. Ward of Salem, who obtained them recently from the pond at the Paper Mills in the town of Bedford, Mass. They were found growing in irregular masses on the upper side of the flume above the mill, attached to some planks. These masses were of various sizes, some of the largest covering the area of a half bushel. Mr. V. O. Balcom, residing at the mill first noticed a few there about three years since, but none afterward till now. This year they are very abundant.

The *Cristatella* is a compound fresh-water Polype belonging to Ehrenberg's class *Bryozoa*. The specimen presented has an abnormal gelatinous investment, probably acquired by the animal during confinement.

This Polype is reproduced both by gemmæ and true ova. The animal is microscopic; but the mature eggs are about one twentieth of an inch in breadth, have a gelatinous envelope and are furnished with sixteen hooked spines. The Polypary, when perfect, measures only from one-half inch to two inches in length and about one-quarter of an inch in breadth, and is described as being "of a fine translucent green color and fleshy consistence."

A very curious fish had been presented to the Institute by Mary W. Nichols. It was taken in Marblehead. It resembles the genus *Corniger* of Agassiz, and is a very interesting fact that none of this family seem to have been seen before north of Florida. A short time since a Mr. Samuels found some specimens of the genus *Liparis* on Nahant Beach. This, on the other hand, has been before unknown save in high northern latitudes.

The Institute has been so fortunate as to receive a fine collection of reptiles belonging to the South Carolina Region from Dr. J. H. Mellichamp of that state. A similar collection of great value has arrived from the West Coast of Africa by the favor of Mr. G. Chandler. A very beautiful series of fishes from the Sandwich Islands has also been received from Prof. Agassiz and J. M. Barnard, Esq.

The Chair exhibited specimens of the Joint weed (*Polygonum articulatum*) which, as was stated to him, was found growing very abundantly along the river bank. He thought it a curious plant and quite a feature in the flora of Groveland.

Geo. D. Phippen of Salem, remarked that this time of the year was generally considered to be very productive of flowers; but still his success in finding them to-day had been very poor. He made a brief enumeration of the species, which he had found and added some comparisons between the flowers of the spring and those of autumn.

S. P. Fowler of Danvers, observed that, wherever we examine the vegetation along a railroad track, we generally find it to differ materially from that of ordinary ground. Moreover such situations are choice places on which to look for the commoner kinds of plants in fine condition. To-day he had occasion to walk over the track from Bradford, and it surprised him to see such variety and luxuriance in the plants there growing. Of willows alone he had noted five or six distinct kinds, and not far from the Merrimac Bridge, he had found the same Dwarf Birch which he first saw at Andover and spoke of at the meeting there. Here it was from six inches to a yard high. The Harebell is frequently found in this locality. The last named plant he had perfectly succeeded in cultivating; it grew <sup>ad-</sup>very freely in the garden and is loaded with flowers.

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Dr. Spofford of Groveland expressed his satisfaction at meeting the Institute to day, and in the various exercises of the meeting. He had not been able to be present during the earlier proceedings, much to his regret ; but he trusted that he and his friends in Groveland, might again have the pleasure of welcoming the Institute to their town, and sharing in the very agreeable and profitable exercises of their meeting.

On motion, the thanks of the Institute were voted to the Messrs. Spofford, Messrs. Stickney, Mr Rollins Savary, Mr. William N. Chase, and other citizens of Groveland, for their kind attentions during the day ; also to Mr William Balch, for the use of the grove ; and to the Proprietors of the Independent Church, for the use of their house for the present meeting.

The Institute then adjourned.

*Wednesday, October 5, 1859.*

**FIELD MEETING AT BEVERLY FARMS.**—This, the last of the series of Field Meetings for this year, was attended by a considerable number, though the company was not as large as at some of the previous gatherings. The party went down by the morning train, alighting at Pride's Crossing, a short distance west of the regular station at the "Farms" or "West Beach." From thence proceeding to the village, the visitors were joined by Rev. Mr. Brooks, minister of the Baptist Church at this place, and by some others, resident in the village, and the jaunt was continued in several directions, with much of general satisfaction, though, speaking as to scientific collections, with very various success. For the most part, the route was along the little brook in its course through the meadows till, arriving at a rustic way called the "Lane," the neighboring woods seemed to offer the greatest attractions, <sup>and</sup> the parties sought their recesses

accordingly. All the autumnal beauty of the forest was upon the landscape, the gorgeously tinted leaves alternating with the persistent verdure of the evergreens and betraying by their varying depth of color the hidden track of streams, or the quiet retreat of semi-stagnant waters. The wild berries of the thickets were ripening in the mellow autumn sunshine, while the rattling chirp of grasshoppers and crickets reveling among the tardily-opening flowers and half-dry herbage, all contributed to 'make up a delightful picture of a genuine Indian Summer in New England. The scientifically inclined among the strollers gave due attention, of course, to the fauna of the territory, and many good specimens were soon peeping from baskets and bottles to prove both the fruitfulness of the field and the sharp eyes and nimble fingers of the explorers. Frogs of various sorts, striped snakes, and several kinds of newts or salamanders, all went to swell the list of acquisitions in this department. This party were accompanied by a bright little lad, who was always ready to climb a tree or jump a bog or brook to serve the wishes of the strangers ; and gave free utterance to the popular prejudice against the newts, or "abbits" as he called them, persisting that the bite of one would produce certain death. The little fellow 'had not thought to inquire, any more than some older persons, whether the creature was ever known to bite at all, a rather necessary pre-requisite to any decision as to its venomous properties.

Other companies pursued different routes. Some resorted to the beach and followed a pleasant track along the seashore, whose gurgling rollers, breaking incessantly among the pebbles, might be heard far inland like the good natured growl of some half-sleeping monster of the forest. Here are many beautiful summer residences, occupied by citizens of Boston and the neighboring cities, and through some of the elegant grounds adjoining, a part of the members sauntered with great satisfaction, admiring the taste and comfort with which wealth surrounds itself in such situ-

ations. During the past twenty years, all these changes have been made, and the natural beauties of this shore, heretofore overlooked, have been duly appreciated.

At a quarter before three, P.M., the afternoon meeting was called to order in the Vestry of the Baptist Church, by Vice President Russell. The Records of the preceding meeting being read, the Secretary announced the following donations.

*To the Library*—from N. J. Lord; George P. Bradford; John L. Sibley of Harvard College; Charles T. Brooks of Newport, R. I.; Montreal Society of Natural History; Society of Social Friends in Dartmouth College; United Fraternity of Dartmouth College; Oliver P. Hubbard of Dartmouth College; Alpheus Crosby; Thomas R. Crosby of Norwich, Vt.; Charles W. Upham; Jesse Smith; Edward A. Smith; Congregational Library Association, Boston; Children of the late Israel Williams.

*To the Cabinets*—from B. F. Mudge of Lynn; Mrs. Charles Endicott; Calvin W. May; Joshua Cleaves; Henry Stone; William Glover; William A. Lander; James Oliver of Lynn; Charles Farrington of Cedar Rapids, Iowa; C. H. Price; Henry Rooth; L. Agassiz; J. M. Barnard; D. F. Weinland; W. H. A. Putnam; Benj. W. Stone; R. Matthews; C. Cooke; James B. King; Nath'l P. Allen; J. M. Ives; John L. Russell; Derby Pickman; Miss Treadwell; Charles F. Williams.

Letters were announced from C. B. Richardson of New York; Ohio Historical and Philosophical Society; Trustees of Newburyport City Library; S. B. Buttrick; James C. Sharp of Dorchester, Mass.; Emelien De Wael of Antwerp; B. W. Stone; Secretary of the Interior, Washington.

The Chair in opening the exercises, entered into a brief explanation of the nature and history of the Institute. The



circumstances of the origin of the present society were narrated, and the purposes of the Field Meetings, in encouraging the observation of nature, and a fuller acquaintance with the productions of every man's own town, were considerably enlarged upon. No man, till he has actually examined nature, has any adequate idea of the beauties that dwell in every leaf, and mouldy sod and rocky fragment. Here, said he, is a mossy stick, a chance thing picked up in the day's ramble. Every one of these encrusting mosses is a plant of rarest elegance, perfect in structure, its roots, its stems, its fruitful capsules, all complete symmetrical and charming in their adaptedness to their appropriate ends. Here too, is a fern, not, perhaps, rare; yet upon this one species a lecture might be based, extending profitably through a whole afternoon. Nor are such investigations useless; for it is to such fungous vegetation, in many cases that the diseases are due that effect agriculture and injure our corps; and here the naturalist becomes a public benefactor, for by his investigations we learn the nature of the pest that afflicts us and how, if at all, we may rid ourselves of its presence.

R. H. Wheatland of Salem, was pleased to have received such a large and interesting variety of zoological specimens as the results of the day's efforts. Here was a large Trout, caught by Mr. Allen, and several small but not less curious specimens of the Common Eel. We are so fortunate, moreover, as to have found some Sticklebacks, the smart little fishes that build nests in the water as birds do in the air, and inhabit them for the same purposes. There are snakes in Beverly also, for we have a good specimen of the Ribbon Snake, and one of what is known as the Checkered Adder, still young. Some one has likewise captured a Striped Squirrel in the woods, and about the meadows these Salamanders and Frogs have been found to add to the list. One of the former was formerly known to scientific men as the *Salamander venenosa*, as every one supposed it to be ve-

nomous. That idea is now exploded, for there is not only no disposition on the part of the creature to bite, but every variety of them will always seek to escape from us with all haste, and many of them can do so with exceeding celerity. All of them are perfectly innocent. The *Cristatella*, spoken of at the last meeting has been examined by Agassiz, who inclines to explain its great size, not by attributing any overgrowth to this specimen, but by supposing it to belong to a different species from any before examined. He concludes that this gigantic size is perfectly natural and proper to this species wherever found.

The Chair said no one could overrate the good of preserving specimens of common things, for examination by scientific students. Where no person could anticipate it, a new fact might be brought out, of the first importance to science and the world. Who can tell who he may be instructing by a simple statement of some fact well known to him? The little fellow who accompanied us this morning will never forget that Salamanders are not poisonous, though he has always thought so till to day. The mere assurance of a fact familiar to me and others, may thus affect the whole of that boy's future life in favor of truth and correct knowledge in this matter and so of others, we know not who or how many.

C. M. Tracy of Lynn, in remarking on the plants gathered in the rambles, alluded to the Fringed Gentian (*Gentiana crinita*.) It seems like the farewell of the Summer, pure and beautiful, and full of the very exuberance of peace. The Gentians are quite numerous, and exhibit some very curious characters in the course of the series. The range of color among them is remarkable, for there are yellow, red, blue, purple and white species, with many of intermediate shades. They are difficult or impossible of cultivation from the supposed fact of a parasitic tendency in the roots; one genus in the family, *Voyra*, is, in fact, a leafless parasite.

The Black Alder (*Ilex verticillata*) is to us in New England what the Holly is in the mother country. Its berries are more vivid in their scarlet glory, if possible, and the plant might well take the same place in our winter decorations with an effect uniformly good. The fruit of this shrub is not quite as durable in its beauty as the Holly berry, but sufficiently so for all necessary uses.

The Garget, Poke or Scoke, is another plant of interest. It is full of color. The black, plentiful berries are bursting with juice, whose rich purple seems only employed in making hideous the faces of strolling boys in pasture ways. If some means could be found to fix this beautiful color and give it the necessary permanency, the dyer's art would find a vast acquisition. The root is possessed of powerful properties; and the village cow-doctor habitually resorts to it to cure the ailments of his favorite patients. Its efficacy in such cases is much extolled, but, never having observed the experiment, the speaker could not decide upon its merits.

The Yellow Snapdragon or Toadflax, (*Linaria vulgaris*), is a very common plant in some situations with us, but not to the same extent as in the Middle States. There it rises to the rank of a pernicious intruder into cultivated grounds, and causes the husbandmen as much trouble, nearly, as the White-weed does in New England.

John M. Ives, of Salem, desired to call attention to the practice hitherto pursued by gardeners, of stripping the grape vine of its leaves, in order to facilitate the ripening of the fruit. This practice was thoroughly founded in error; for the leaves are as lungs and digestive organs to every plant, and to take them away is to destroy the only means that can produce perfection in the fruit desired. Collateral to this, and illustrating the same topic, is the experiment of "girdling" or "ringing" the branches of the vine, for the purpose of increasing the size and excellence of the berries. This

was frequently done and was very successful. He showed a branch which had been thus treated; pointing out the place where the bark had been removed and the subsequent enlargement of the wood above the wound by the continued action of the ascending sap. In pursuing his remarks, Mr. Ives urged upon farmers and others the propriety of giving the greatest attention to those fruits which have originated on our own soil as better adapted to this climate, and therefore more likely to repay their care. The "Hubbardston Nonesuch" Apple was such a one, and the "Minister" another. This latter was first raised in Rowley, and was a very superior fruit indeed but tender skinned and needed care in gathering and packing. Both were highly popular in Europe, which was a very good test of real excellence in any fruit.

Rev. Mr. Brooks of West Beach was glad the Institute had made this visit. He had entered into the ramble with the members and had derived real pleasure therefrom, yet pleasure was not the only gain in these meetings, there was and must be real profit arising from the continuance of such gatherings among the people. He had gained a share of knowledge in regard to the objects noticed to day, and had no doubt that others had profited even more than he. As to the Salamanders examined here, he would like to know if they were really amphibious.

R. H. Wheatland replied that at certain seasons of the year they became so, taking to the water something after the manner of the common toad.

On motion of Hon. Allen W. Dodge of Hamilton, the thanks of the Institute were presented to Messrs. John R. Baker, Thorndike P. Haskell and other citizens of Beverly Farms, for their kind attentions to the members during the day, and also, to the proprietors of the Baptist Church for the use of their Vestry for the meeting this afternoon.  
Adjourned.

*Thursday, Dec. 8th, 1859.*

Meeting this evening, at 7 1-2 o'clock,—Vice-President Rev. John L. Russell in the chair. After the reading of the records of the preceding meeting, the following donations were announced, received since the Field Meeting at "Beverly Farms" in Beverly, on Wednesday, Oct. 5, 1859 :

*To the Library*—from John L. Russell ; Boston Society of Natural History ; Canadian Institute at Toronto ; Joseph Cloutman ; Stephen H. Phillips ; John L. Sibley of Cambridge ; Connecticut Historical Society ; W. H. Kilby of Eastport, Me. ; Department of the Interior, Washington, D.C. ; Henry Clark of Poultney, Vt. ; Academy of Science, of St Louis, Mo. ; William O. Potter ; M. A. Stickney ; Tennessee Historical Society : William Stone ; Alpheus Crosby ; T. J. Hutchinson ; John Bartlett of Cincinnati, Ohio ; Montreal Society of Natural History ; B. W. Stone ; Charles J. Bushnell of New York City ; City of Boston ; Samuel A. Green of Boston ; J. N. McJilton of Baltimore, Md. ; William Brown ; Albert S. Bickmore of Dartmouth College ; Edward P. Crowell, of Amherst College ; O. C. Marsh, of Yale College ; Jeremiah Colburn of Boston ; Academy of Natural Sciences, at Philadelphia, Penn. ; George F. Read ; Charles A. Ropes ; Committee of Arrangements of Universalist Church, Salem ; James S. Bryant of Hartford, Conn. ; N. J. Lord ; Trustees of Boston Public Library ; Smithsonian Institution, Washington, D. C.

*To the Cabinets*—from James Dow of Beverly ; William Downing of West Danvers ; John N. Martin ; Charles F. Williams, Jr ; W. H. A. Putnam ; George Perkins ; Wm. O. Potter ; A. B. Almon ; C. K. Hadley of North Andover ; John J. Averill ; Charles H. Norris ; B. Grover ; S. H. Phillips ; F. W. Putnam ; James Parsons ; James Bartlett of Wenham ; Mrs. W. O. Potter ; C. H. Price ; Amos Frost of Manchester ; James Upton ; George Harring-

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ton ; William Stearns ; Miss E. Wheatland ; R. H. Wheatland ; Edward D. Ropes ; William Briggs of Chicopee ; J. Colburn of Boston ; Mrs. S. A. Abbott ; Joshua Cleaves ; A. S. Packard, Jr. of Brunswick, Me. ; B. E. Shaw ; Edwin Upton ; D. A. Bulkley of Williamstown ; Mrs. J. L. Russell ; B. F. Browne ; E. A. King, of San Francisco, Cal. ; Charles H. Morse of Cambridge.

Letters were read from J. G. Holland of Springfield ; T. W. Higginson of Worcester ; Samuel Swett of Boston ; Edward P. Crowell of Amherst ; Charles Babbidge of Pepperell ; A. A. Low of Brooklyn, N. Y. ; Charles T. Brooks of Newport R.I. ; James F. Clark of Boston ; Jeremiah Colburn of Boston ; Charles J. Bushnell of New York N. Y. ; Nehemiah Adams of Boston ; David King of Newport R. I. ; Thomas M. Brewer of Boston ; J. K. Wiggin of Boston ; John L. Clarke of Chicago, Ill. ; J. K. Tefft of Savannah Ga. ; W. R. L. Ward of New York, N. Y. ; James S. Bryant of Hartford, Conn. ; Spencer F. Baird of Washington D. C. ; Peabody Institute, South Danvers ; Trustees of Boston Public Library ; Ohio Historical and Philosophical Society ; A. S. Packard Jr. of Brunswick, Me. ; C.W. Peale of Shamokin, Northumberland County, Penn. ; Robert Damon of Weymouth, England ; W. D. Hartman of Westchester, Penn. ; Samuel Colman of New York ; Edward D. Ropes of Zanzibar ; D. T. Taylor of Worcester ; D. A. Bulkley of Williamstown, Mass. ; Adams & Co. Baltimore, Md. ; C. B. Richardson of New York ; Jacob W. Reed of South Groveland ; Emilien DeWael of Antwerp ; N. B. Benedict of New Orleans, La.

Dr. R. H. Wheatland particularized some of the most important accessions which have recently been made to the cabinets, and offered some remarks upon the same. He then spoke of the habits of the Taylor Bee,—in continuation of what he said on this subject at the Field meeting at Saugus, in July last.

Mr. George D. Phippen alluded to the habits of a bee, similar, somewhat, to the one described, which he observed some years since in his garden.

After remarks from the Chair and other members on this subject, the Institute adjourned.

*Thursday, Jan. 12, 1860.*

Meeting this evening at 7 1-2 o'clock,—Vice President, Rev. J. L. Russell in the Chair. Records of preceding meeting read.

Donations from the following, were announced :

*To the Library*—from the Massachusetts Historical Society ; L. A. H. Letour of Montreal, C.E.; Henry F. Shepard ; Boston Society of Natural History ; Chicago Historical Society ; Charles J. Bushnell of New York ; George Upton ; Charles B. Richardson of New York ; Joseph Cloutman ; Academy of Natural Sciences at Philadelphia, Penn.; Miss Hannah P. Putnam ; American Geographical and Statistical Society ; Richard Edwards of St. Louis, Mo.; Alfred Poor of Groveland ; Canadian Institute at Toronto ; J. Atkin Meigs of Philadelphia ; William Roberts ; Trustees of the New York State Library ; John Chadwick ; Willard P. Phillips ; Maine Historical Society ; John B. Alley, M. C.; New England Historic-Genealogical Society ; Mrs. T. Cole ; N. J. Lord ; Alpheus S. Packard of Brunswick, Me.; John L. Russell ; William H. Prince of Northampton ; C. C. Haven of Trenton, N.J.; Montreal Society of Natural History ; George F. Read ; Wm. Goldthwait.

*To the Cabinets*—from B. P. Walcott ; C. Cooke ; William Lefavor ; Geo. D. Phippen ; Joseph True ; B. Fabens ; T. Trask ; C. H. Norris ; J. N. Martin ; W. W. Hurd ; W. P. Phillips ; G. D. Glover ; Edward H. Knight ; Wm. Goldthwait.

A letter was read from Dr. W. H. Prince of Northampton, tendering to the Institute the Records of the Philosophical Library Company, which were found among the papers of his late grandfather, the Rev. Dr. John Prince of this city. This was truly a valuable acquisition to the manuscript Department of the Institute, containing the desired information requisite to complete the history of that Institution, which in 1810 was incorporated with the Social Library and formed the nucleus of the Library of the Salem Athenæum.

Extracts from these Records were read by the Secretary, accompanied with sketches of the prominent persons who were members of that Institution.

A circular was read from the Lyceum of Natural History, in Williams College,—proposing to undertake an expedition to the coasts of Louisiana, Texas, and Central America, for the purpose of studying the Natural History of the country and making collections; and requesting the co-operation of societies and individuals interested in these pursuits. After some discussion, it was referred to the curators of Natural History.

Letters were also read from Edwin Harrison of St. Louis, Mo.; Richard Edwards of St. Louis, Mo.; H. M. Neisler of Butler, Taylor Co., Ga.; William Barry of Chicago, Ill.; New England Historic-Genealogical Society; New Orleans Academy of Science; Maine Historical Society; A. S. Packard of Brunswick, Me.; D. T. Taylor of Worcester; John W. Dean of Boston; W. P. Phillips.

Rev. Mr. Russell presented an interested table, showing the number of cents that he had received in change for one year, from Nov. 28, 1858, to Nov. 28, 1859, with the dates of their coinage.

Several interesting queries were suggested, and remarks made by several members, after which the Institute adjourned.



*Thursday, February 2d, 1860.*

Meeting this evening at 7 1-2 o'clock,—Vice-President Rev. John L. Russell in the chair. Records of preceding meeting read.

Donations were announced from the following :

*To the Cabinets*—from R. Brookhouse ; Joseph Cloutman ; N. B. Mansfield ; Samuel Carlin ; James M. Barnard of Boston ; Charles Millett, 2d ; Zoological Museum, Cambridge, (in exchange) ; E. A. Upton ; Derby Pickman ; James Bartlett of Hamilton ; Charles Creeseey ; S. B. Buttrick.

*To the Library*—from the American Antiquarian Society ; Congregational Library Association, Boston ; Emilien de Wael of Antwerp ; Miss S. Nichols ; Joseph Cloutman ; S. A. Green of Boston ; James S. Bryant of Hartford, Conn. ; Alpheus Crosby ; William Brown ; M. A. Stickney ; Josiah Hayward ; Philadelphia Academy of Natural Sciences ; Mrs. L. P. Johuson ; Canadian Institute at Toronto ; D. F. Weinland.

Letters were read from R. Damon of Weymouth Eng. ; Emilien De Wael of Antwerp, Belgium ; Henry P. Dawson of Morrisiana, Westchester Co., N. Y. ; Fredrick S. Pease of Albany, N.Y. ; C. B. Richardson of New York ; Trustees of Boston Public Library ; Peabody Institute of South Danvers ; William Brown ; A. F. Gage of Williams College.

R. H. Wheatland offered some remarks upon the donations recently made to the department of fishes by Caleb Cooke from Para, S.A. ; Charles Millett 2d. from Muscat, and proposed a vote of thanks for this valuable and highly interesting collection, which was adopted.

After transacting some private business, adjourned.

*Thursday, Feb. 23, 1860.*

Meeting this evening at 7 1-2 o'clock ; Vice President Russell in the chair. Records of the preceding meeting read.

Donations were announced from the following:

*To the Library*—from Philadelphia Academy of Natural Sciences ; E. M. Stone of Providence, R. I. ; Charles B. Richardson of New York, N. Y. ; John S. Ives ; Boston Society of Natural History ; James Upton ; John L. Russell ; Pennsylvania Historical Society ; N. A. Horton ; Chicago Historical Society ; Directors of the Public Library at Newburyport ; Alpheus Crosby ; John B. Alley, M.C.

*To the Cabinets*—from James Stone of Beverly ; John P. Putnam ; George E. Berry ; Robert Peele : Brown E. Shaw : A. W. Dodge of Hamilton.

Letters were read from F. S. Pease of Albany, N.Y. ; W. Brown ; H. M. Neisler of Butler, Taylor Co., Ga. ; O. P. Hubbard of Dartmouth College.

Mr. Caleb Cooke, being called upon, presented an account of his voyage to Para last autumn, describing some of the specimens of Natural History which he had collected.

Mr. Russell then followed and gave an interesting and lucid account of that curious and remarkable group of plants called Epiphytes, or Air Plants. The subject was suggested by some specimens having been collected at Para by Mr. Cooke and presented by him to the Institute. The remarks of the gentlemen were listened to with much attention. These plants are becoming great favorites with many of our horticulturalists and floral amateurs. Their peculiar habits and mode of culture are claiming attention and will richly repay the care and labor bestowed upon them. A few years since, when the Lily House of our fellow-citizen, Mr. Allen,

was exciting much interest by the magnificent flowers of the Victoria, a beautiful collection of these plants suspended from the sides of the house, attracted notice, many of them having expanded their curious and grotesque flowers.

Rev. C. C. Beaman expressed his gratification in listening to the remarks which had been offered. He then alluded to the interest which ministers in many of our rural towns had taken in the cultivation of the garden. He suggested the propriety of having some history of the horticulture of this county, its pioneers, progress, &c.

The meeting concluded with a communication from Mr. John M. Ives on the Life and Labors of Alexander Wilson, the American Ornithologist. Mr. Ives's long familiarity with the habits of our birds, to which he has devoted much study, and his personal acquaintance with many of our most distinguished Ornithologists, render him a suitable person to speak on this subject.

Adjourned.

*Thursday, March 8, 1860.*

Meeting this evening at 7 1-2 o'clock. George D. Phippen in the Chair. Records of the preceding meeting read.

Donations were announced from the following :

*To the Library*—from William Brown ; James S. Bryant of Hartford, Ct. ; Philadelphia Academy of Natural Science ; Chicago Historical Society ; John Chadwick ; Isaac A. Lapham of Milwaukie, Wis. ; Chas. B. Richardson of New York ; John L. Sibley of Cambridge ; Adams, Sampson & Co., of Boston ; Samuel A. Green of Boston ; Edmund B. Wilson ; N. J. Lord.

*To the Cabinets*—from William A. Phillips, of Swampscott; H. M. Neisler of Butler, Taylor Co., Ga.; Edward D. Ropes W. T. Julio; George Leeds; Wm. Crandall.

Letters were read from Joseph H. Leavitt; E. D. Ropes; Samuel A. Green of Boston; Corporation of Harvard College; John De Laski of Vinal Haven Me.; J. K. Wiggin of Boston.

Also from J. Gardner White of Boston, in behalf of the New England Historic-Genealogical Society, requesting the co-operation of the Institute in memorializing the City Government of Boston relative to the printing of the Records of that town prior to 1700. This letter was referred to the curators of the Historical Department, to take such action in relation thereto as may be deemed advisable.

Rev. C. C. Beaman read a very instructive communication "on the Hopkins family in Rhode Island, to which Stephen Hopkins, one of the signers of the Declaration of Independence, July 4, 1776, belonged."

After some remarks from the Chair, a vote was unanimously adopted, "That the thanks of the Institute be presented to the Rev. C. C. Beaman for the very interesting and valuable communication on the Hopkins family in Rhode Island, read this evening; and that a copy be placed at the disposal of the Publication Committee." The above has been printed in Historical Collections of Institute, Vol. 2, No. 3, for June 1860.

The remainder of the evening was profitably devoted to the reading of a paper on Fruit Culture by J. M. Ives, a continuation of his remarks on this subject presented at meetings of the Institute the previous season.

Adjourned.

*Thursday, March 22, 1860.*

Meeting this evening at 7 1-2 o'clock—Henry M. Brooks, one of the Vice-Presidents in the Chair.

Records of the preceding meeting read.

Donations were announced from the following :

*To the Library*—from George F. Read ; Chicago Historical Society ; George Andrews ; Canadian Institute at Toronto ; Nathaniel Paine of Worcester ; Robert Deland ; Jonathan Perley, Jr. ; J. H. Phippen.

*To the Cabinets*—from Samuel H. Curwen ; A. Hanson ; Mrs. William Crandall ; Mrs. George R. Mason ; John N. Martin.

Letters were read from Maine Historical Society ; Massachusetts Historical Society ; L. A. H. Latour of Montreal, C.E. ; Solomon Lincoln of Boston ; C. C. Beaman.

Dr. R. H. Wheatland called the attention of the Institute to the large collection on the table, of reptiles, fishes, crustaceans and radiates. They consisted of about one-half of the alcoholic specimens which had been presented to the Cabinets during the three winter months and were contributed principally by Capt. Charles Millet 2d, Messrs. C. Cooke, and Edward D. Ropes of Zanzibar, and Dr. H. M. Neisler of Butler, Taylor Co., Ga.

As the two former contributions had been alluded to at previous meetings, the remarks were chiefly confined to those of the two last-named. That of Mr. Ropes contained probably the largest number of specimens in spirit which had ever been presented, and though subjected to the vicissitudes of a long voyage in tropical seas, arrived in a condition rarely equalled by any which had been procured on our own coast. It could hardly have been possible, for one,

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even well versed in Natural History to have filled a can with specimens more judiciously selected and more carefully preserved.

The collection was exceedingly rich in those lower classes of animals which are usually neglected by the ordinary collector, and contains probably many specimens which are new to the Cabinets in this country or in Europe. It was nearly if not wholly marine, consisting of such specimens as are found on the coral reefs of Zanzibar. Of these, the fishes were numerous and interesting, and of a size well adapted for exhibition in the Cabinets of the Society, and from the care in their preservation they retained their brilliant hues, and the delicate portions of the fins, &c., were uninjured. The crustaceans or crabs, were well represented by a number of specimens, many of which presented rare and curious forms.

A considerable portion of the collection was devoted to the starfishes, whose value can only be truly appreciated by the Naturalist, though their curious forms, and the rich coloring of many of the species are objects of interest even to the casual observer. Belonging to the same general class as the above, are the echini, sea urchins or sea eggs—and the holothuria or sea cucumbers, to which belong the biche de mer of commerce; these were largely represented, and the beautiful state of preservation of the former, with their long and slender spines unbroken, were objects of much admiration.

The value of the collection may be inferred from the fact that not one of the species is found on our own coast, and very few, if any, were previously in our Cabinets.

The contribution of Dr. H. M. Neisler, adds several new species of reptiles, and is particularly desirable, as giving us a collection of the field mice, and the small quadrupeds of Georgia which is larger than that of similar animals indigenous to our vicinity heretofore in our Cabinets.

It is desirable that attention should be given, to the collecting a complete suite of the quadrupeds of this county, particularly of the smaller species, as the mice, moles, shrews, &c. To this end contributions are requested from the members and friends who reside in the country, or are frequently rambling among our rural retreats.

Dr Neisler, also contributed many specimens of shells and fossils, principally collected in the place of his residence.

Rev. Mr. Russell then made the following remarks, viz: Having been present at the opening of the case of fishes, echini and crustacea, collected by Mr. Edward D. Ropes, at Zanzibar, it is with pleasure that I add my testimony to the excellent order in which they come to hand. Nothing could exceed the delicacy of several echini, or the beauty of their spines, apparently uninjured in the least, by being placed by him in boxes and then plunged in the can of prepared alcohol. The same may be said of the crabs, which are very liable to become mutilated by attrition on the passage home. Small fishes, mere minnows in size, were sometimes wrapped together and packed in small paper boxes. The holothuria were of remarkable characters, having the fringed apparatus peculiar to some species in fine preservation. From the stomachs of some of these, H. F. King succeeded in procuring several diatomacea or microscopical forms of oceanic life, but identical with species in our seas, so far as he has examined them. From the folds of others, sticking to their outside, I procured two small fragments of algæ or sea weeds; one an *Ulva*, the other a *Gelidium*. I should be glad to have sea weeds especially from the tropical seas and from reefs, so mentioned in the instructions accompanying the Society's cans. They may be plucked on the spot wherever fishes are procured and thrown in with them as sort of dunnage; perhaps to the benefit of the other specimens—but a better way would

be to rudely dry them as they come from the salt water ; then tie them up in bundles, enveloped in coarse paper and kept dry : or put into some box. It is always best to take every thing that first comes in one's way, not being select in choosing. Any thing that is a sea weed, large or small, homely or pretty, should be saved. Often fragments of what might be considered valueless, are found to be more estimable than sparkling cystals or glittering stones. Whenever opportunity occurs of procuring sections of rough bark from foreign forest trees, shrubs and gigantic tropical vines, the Institute would be greatly obliged to any who would collect such ; preserving with caution the *rough* exterior and *not removing* any scurfiness or mossy growth there may be upon such. Any member of the Essex Institute, resident in a foreign climate, especially at the tropics, could not render his Society a greater service than to be on the alert to *whatever* meets his eye in every department of Nature : and as pieces of native wood, bark, and sea weeds are the most readily cared for in the vegetable kingdom, the Curator of the Herbarium would welcome every fragment of such which may reach him by the alcohol-cans or by other means.

The Institute is under great obligations to those members and friends, resident temporarily in foreign climes, or who are attached to some of our merchant vessels, for their willingness to take charge of cans for the purpose of depositing such specimens of Natural History as fall in their way during their voyages and rambles, and the zeal and interest manifested in collecting and preserving them.

Mr. Jacob Batchelder mentioned that the Essex County Teachers' Association propose to hold a semi-annual meeting in Salem, on Friday and Saturday, the 6th and 7th of next month, and on his motion, a vote was unanimously adopted, that the Association be invited to visit the Rooms of the Institute, at such time during the coming session as may be most convenient. Adjourned.



*Thursday, April 12, 1860.*

Meeting this evening at 7 1-2 o'clock—Vice-President Henry M. Brooks in the Chair.

Records of preceding meeting read.

Donations were announced from the following:

*To the Library*—from the City of Boston; Moses G. Farmer; Connecticut Historical Society; Philadelphia Academy of Natural Science; Jonas B. Clark of Swampscott; E. Putnam; N. J. Lord; James Upton; Chicago Historical Society; Wm. Stimpson of Washington, D.C.; Wm. P. Tucker of Bowdoin College; Caleb Foote.

Letters were read from Corporation of Harvard College; Trustees of the Public Library of Boston; Trustees of the New York State Library; Smithsonian Institution; J. De Laski of Vinal Haven, Me.; S. A. Green of Boston; New Hampshire Historical Society.

JAMES UPTON, Chairman of the Committee on Fruits, read the following communication containing his notes taken in the year 1856 on the ripening of sixty varieties of Pears.

The following notes of the ripening of certain varieties of Pears, are submitted to the Institute on a suggestion that they might be deemed worthy of preservation for future reference. The dates are those on which the first and last specimens were in eating. It should be distinctly borne in mind that the observation was for *one season* only, and the fruit, with but very few exceptions, from *one orchard*.

Madeleine, . . .	July 28 to Aug. 15
Doyenne d'ete, . . .	Aug. 1 " 12
Beurre Giffard, . . .	" 12 " 22
Bloodgood, . . .	" 15 " 22
Muscat Robert, . . .	" 15 " 25

Elizabeth V. M.	Aug. 18	Aug. 28
Limon V. M.	" 20	" 31
Rostiezer,	" 23	" 31
Ott,	" 25	" 31
Hoyerswerda,	Sept. 1	Sept. 6
Summer Francreal,	" 1	" 12
Dearborn's Seedling,	" 5	" 12
Bartlett,	" 5	" 30
St. Ghislain,	" 5	" 25
Beurre d'Amalis,	" 10	" 20
Belle Lucrative,	" 10	" 30
Andrews,	" 10	Oct. 4
Muscadine,	" 12	Sept. 22
Washington,	" 12	" 25
Golden Beurre of Bilboa,	" 15	" 25
Tyson,	" 15	" 25
Flemish Beauty,	" 15	" 30
Beurre de Beaumont,	" 15	" 30
Paradise d'Automne,	" 17	Oct. 5
Walker,	" 20	Sept. 30
Summer Thorn,	" 20	" 30
Raymond,	" 24	" 30
St. Andre,	" 25	Oct. 5
Long Green,	" 25	" 5
Bonne de Zees,	" 25	" 1
Beurre Sprin,	" 25	" 10
Petre,	" 25	" 25
Thompson,	" 25	" 25
Heathcot,	" 25	" 8
Bon Chretien Fondante,	Oct. 1	" 20
Forelle,	" 1	" 15
Gansel's Bergamot,	" 1	" 15
Duchesse d'Orleans,	" 1	" 15
Henry Fourth,	" 1	" 15
Comte de Lamy,	" 1	" 30
Louise Bonne de Jersey,	" 1	" 15
Seckel,	" 1	" 25
St. Michael's,	" 3	" 20
Beurre Bosc,	" 5	" 25
Urbaniste,	" 5	Nov. 10
Beurre d'Anjou	" 5	" 30
Duchesse d'Angouleme,	" 5	" 30
Marie Louise,	" 10	" 20

Eyewood, . . . . .	Oct. 10	Nov. 8
Lawrence, . . . . .	" 10	Dec. 1
Wilkinson, . . . . .	" 15	Oct. 25
Beurre Clairgeau, . . . . .	" 15	Nov. 10
Beurre Diel, . . . . .	" 25	" 30
Figue, . . . . .	" 25	" 30
Passe Colmar, . . . . .	" 25	March 10
Glout Morceau, . . . . .	" 25	" 10
Winter Nelis, . . . . .	" 15	" 31
Beurre d'Aremberg, . . . . .	" 15	" 10
Easter Beurre, . . . . .	Nov. 1	April 10

The following communication was read by James Upton :

*Remarks on ripening Summer and Autumn Pears, and on the preservation of the Late keeping varieties :*

The quality of many and perhaps most of the summer and autumn pears I have found to be improved by ripening in the house. Pears of the Rousselet family, however, such as Rostiezer, Ott, Seckel, form an exception to this general statement, and are perhaps never better than when eaten ripe from the tree. Some varieties, of which *Paradise d'Automne* is a notable example, have proved nearly worthless if suffered to ripen on the tree.

Cultivators of the foreign Grape have invariably found a severe *thinning* necessary in order to obtain that fruit in its greatest perfection. A similar necessity in kind if not in degree, will be recognized with regard to many varieties of the Pear, especially such as incline to overbear. With some, the mere removing of inferior and imperfect specimens will be sufficient ; from others, one half of the entire crop should be taken away ; while the removal of a still larger proportion will often be found advantageous with such varieties as bear in clusters, and very profusely. By this process, not only is the remaining fruit improved in size and quality, but the tree itself is much relieved in what I apprehend to be its severest task—that of perfecting its seed. The proper time for this operation I deem to be when the fruit is about half grown. If deferred until after it has ripened its seed and begun to "swell off," no advantage whatever will be gained. And in speaking of the Grape in connection with the Pear—I think a marked analogy may be traced in the growth and ripening of the two fruits. Both, in their early

stages, attain with a seemingly marvelous celerity to a certain size, and then remain without apparent change for some five or six weeks, while the seed is perfecting. This accomplished, the pear as well as the grape may be said to commence "swelling off," increasing rapidly in size, and gradually assuming the final color of the ripe fruit. In the pear also, as well as in the grape, that change in the character of the juices which constitutes the difference between a ripe and an unripe fruit does not take place until after it has attained its full size and final coloring. It is well known that some varieties of pears, as the Bartlett, for instance, will ripen up and be of tolerable quality even when gathered quite prematurely; but such bear no comparison in size and flavor with those which are allowed to attain their full maturity under the natural conditions.

Some considerable attention has been given for the last few years, towards testing the keeping qualities of our winter pears. And it is found that with a judicious selection of specimens, and a proper attention to the necessary conditions of temperature, &c., more varieties than it was at first supposed, can be preserved in good condition through the winter and into spring. *Beurre d'Anjou*, for instance, keeps well into January; *Glout Morceau* and *Passe Colmar* into March; *Winter Nelis* through March and into April—the last named three, in 1859, outlasting *Easter Beurre*. Lawrence finds its best condition in or previous to January, as does also *Beurre d'Aremberg*; although the latter can frequently be kept one or two months longer. But it is then likely to decay at the core, and its usually rich, vinous flavor degenerates to a villainous acidity. *Beurre Langelier* keeps well, but the writer has not yet succeeded in ripening it satisfactorily.

Pears intended for late winter keeping, should not be gathered too early. As a general rule, they can remain upon the tree to advantage until most or all of the leaves have fallen. The indications of maturity should, however, be carefully watched: and if the fruit begins to fall, or is readily detached by a slight twisting of the stem, it should be gathered at once, and placed in a cool, dark room.

The period between the gathering of the fruit and the setting in of regularly cold weather, is the most critical time in the management of winter pears. For if during "Indian summer" weather they are allowed to become warmed

through, the ripening process will assuredly commence, and no subsequent attention will prevent, or substantially retard its progress. The pears will either ripen prematurely, or they will wilt and become valueless. It is doubtless from a want of proper attention at this point that so many failures occur in attempting to keep winter pears; and that the regretful remark is so frequently made by fruit growers, "my winter pears all ripened off in December." Let the fruit room, then, be dark, dry, and kept as nearly at the temperature of 40 degrees as possible, cautiously admitting air at night, or early morning, when necessary in order to maintain an even temperature during the season of warm days and cool nights; and carefully and promptly removing all overripe or decaying fruit.

The middle of December will ordinarily be about the right time to make arrangements for winter quarters. And on examination it will be found that not all the crop of a given season, nor all the pears of a given variety, nor all the produce of a given tree, will alike be possessed of keeping qualities. Some will be just ripe; others will require a week or two, and others a month or two to come to perfection; while others, and usually much the larger part of the crop, will prove sound, firm, and in good keeping condition for three or four months, if desirable. A little experience will soon enable any competent person to make a judicious selection for that purpose.

The fruit may now be carefully placed in boxes—not more than two tiers deep is preferable—with a thin sheet of cotton wadding above and below each tier, in order to absorb any superfluous moisture. Let the covers be tacked on, and the boxes placed in a good, dry, cool barn cellar, (the cellar of a dwelling house will generally prove to be too dry and warm) taking care to keep the boxes at a suitable distance from the walls and from the bottom of the cellar. The plan adopted by the writer for several years with entire success, has been to place the fruit in single layers in shallow wooden trays, the trays fitting into a chest, and the chest suspended by the handles in mid cellar.

It is worthy of note that a dry and cold winter is much more favorable for the preservation of fruit, than a moderate and open one. Its superior condition in the spring shows this in a very marked degree.

It would seem almost superfluous to allude to the well known fact that winter pears can at almost any period of

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the season, when required, be brought into an eating condition by being placed for a few days in a close, warm temperature. Nor are any further directions necessary with regard to the disposal and preservation of the earlier ripening portion of the crop. They can be well kept in any dark, cool room, free from frost, and will ripen off in a natural succession; being also improved by a short exposure to a warm temperature at the final ripening. And the opinion is hazarded that the very best specimens of winter pears are such as thus ripen off, naturally, rather early in the season; and that at no time are they ordinarily to be found in a higher degree of perfection than in the months of December and January.

After the reading of the above valuable communications, a discussion, partaking of a conversational character followed, participated in by the Chair, Messrs. James Upton, John M. Ives, C. C. Beaman, F. H. Lee, and others.

Adjourned.

*Thursday April 26, 1860.*

Meeting this evening at 7 1-2 o'clock. Geo. D. Phippen in the chair.

Records of the preceding meeting were read.

Donations were announced from the following.

*To the Cabinets*—from Joseph Cloutman; George H. Hovey; Henry Derby.

*To the Library*—from J. L. Waters of Chicago, Ill.; D. A. White; William Briggs; David Perkins; Jacob Winchester; Henry F. Shepard.

Letters were read from the Trustees of the Newburyport Public Library; Corporation of Harvard College; E. O. Proctor of South Danvers.

David Roberts produced a Salem Custom House Book of

Records, covering a period from 1761 to 1775. This book was presented to the Essex Institute, by Capt. J. Porter Felt, a year or two since; who had it from William Stearns, among whose old family papers it was found.

The remarks in relation to this subject have been printed in the Historical Collections of the Institute, vol. ii. No. 4 for August 1860, pages 169—177.

The Committee appointed in July 1859 to ascertain the authenticity of an old building on the estate of David Nichols, rear of Boston Street, being built from the frame of the First Church ever erected in Salem—submitted their report, (see Historical Collections, vol. ii. No. 3, for June 1860, pages 145—148.)

After a discussion in which Messrs. Francis Peabody, A. C. Goodell Jr., and others participated, the report was re-committed, with a request to recommend some definite action to be adopted by the Institute at the next meeting.

**Adjourned.**

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